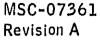
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APOLLO 17 MISSION EVALUATION PLAN

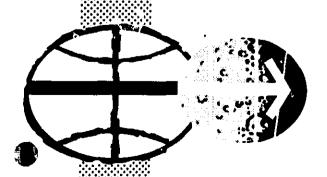
(NASA-TM-X-69530) APOLLO 17 MISSION EVALUATION PLAN (NASA) 79 P HC \$5.75

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MANNED SPACECRAFT CENTER

HOUSTON, TEXAS SEPTEMBER 1972 Revised November 1972

APOLLO 17 MISSION EVALUATION PLAN

PREPARED BY

Apollo Test Division

APPROVED BY

Owen G. Morris

Manager, Apollo Spacecraft Program

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACECRAFT CENTER

HOUSTON, TEXAS

September 1972

Revised November 1972

PREFACE

This plan contains information for the MSC Mission Evaluation Team in support of the Apollo 17 prelaunch checkout and the mission. Key personnel are identified and their responsibilities are defined. The interfaces of the Mission Evaluation Team with the launch center during prelaunch testing, and with the Spacecraft Analysis and Flight Control Teams during the mission, are also explained. The plan is written in two parts. The first part defines the Mission Evaluation Team support to the Launch Center commencing with the subsystem checkout performed on the pad (Test and Checkout Procedures K-0005 for the CSM and KL-0045 for the lunar module). The second part defines the continuous support provided during the mission to the Spacecraft Analysis Room and, subsequently, to the Mission Operations Control Room at MSC. The second part will be updated about 30 days prior to the mission to reflect personnel and measurement changes.

PART A - PLAN FOR MSC MISSION EVALUATION TEAM SUPPORT OF APOLLO 17 FRELAUNCH TESTS CONDUCTED AT KSC

SCOPE

The MSC Mission Evaluation Team will provide support to KSC for all checkout activities commencing with the start of pad operations (figure A-1). Three-shift coverage will be provided during all prelaunch checkout operations.

RESPONSIBILITIES

KSC shall be responsible for determining the existence of a problem and for requesting assistance. The MSC Mission Evaluation Team will be responsible for developing and providing the technical solution of the identified problem, utilizing both contractor and government resources.

ORGANIZATION

The MSC Mission Evaluation Team will operate under the same organizational structure as that used during flight, with the Mission Evaluation Team Manager (or a designated Team Coordinator) heading a team composed of several Analysis Managers, each of whom is supported by a NASA/contractor team. The MSC Mission Evaluation Team organizational elements (given in part B of this plan) will be in effect during the prelaunch test support with the following exceptions:

- 1. The Spacecraft Analysis (SPAN) Room will not be active during this period.
- 2. The Mission Evaluation Team, located in building 45, will interface directly with KSC.

The Resident Apollo Spacecraft Program Office (RASPO) at KSC shall provide required MSC Mission Evaluation Team coordination with KSC and shall be responsible for maintaining a duplicate set of records of all activities.

Contractor Engineering support shall be provided through the mission support rooms located at each prime contractor's facility. Contractor coordination representatives from the Grumman Aerospace Corporation and

the North American Rockwell Corporation shall be located in, or be "on call" to, the Mission Evaluation Room (room 3060, building 45) at MSC. These representatives shall be responsible for providing the contractors' input on all problems.

Entry to Building 45

Building 45 will be open 24 hours a day throughout the mission. However, building 45 will be locked each day during prelaunch monitoring from 6 p.m. to 7 a.m. Entry during these hours can be gained by using the intercommunications between the mission evaluation room (306C) and the east rear door (door closest to building 30). Access will be validated by a regular Manned Spacecraft Center badge.

EVALUATION TEAM MEMBER DUTIES

Evaluation Team Manager

The Evaluation Team Manager shall be responsible for management of the problem evaluation activity and ensuring that the best technical solution is supplied in a timely manner. In addition, he shall keep upper management informed of those test problems which are significant. He shall also issue a list of significant problems as needed.

Team Coordinator

A designated Team Coordinator shall be responsible for monitoring the KSC voice loops in building 45 and contacting the appropriate Analysis Manager to inform him of any requests. He shall maintain records of action sheets in building 45 and inform team members of the current test schedule. He shall also insure that team members, assigned in table A-I, are on station as required. This includes contractor and NASA team members who are at KSC for particular tests as defined in table A-I. In addition, he shall issue copies of records to the contractors and Analysis Managers.

Analysis Manager

Each manager shall be responsible for coordinating and managing activities of all assigned NASA and contractor team members in his area of responsibility. As during the mission support activity, the Analysis Managers shall report to the Evaluation Team Manager.

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Team Member

Each team member shall be responsible for the engineering analysis and evaluation of the problems within the scope of his specialty and shall report to his respective Analysis Manager.

Contractor

Contractors shall maintain a communications system whereby contractor team members, as delineated in table Λ -I, may be contacted at any time by an Analysis Manager. The contractor shall submit inputs to building 45 and respond to requests in the same manner as that employed during the mission.

COMMUNICATIONS

Communications Links

The communications links to be utilized for prelaunch activities are described in figure A-2. All official communications between MSC (NASA and contractor personnel) and KSC are to be documented on forms shown in figures A-3 through A-6. Initial requests for assistance and final resolution of problems must be made through official channels; however, the utilization of unofficial communications links is encouraged, and each Analysis Manager shall interface with his contractor and KSC counterpart to the degree required to provide the most accurate and timely technical solutions.

Two-way communication between KSC and building 45 is available on the command and service module and lunar module troubleshooting channels at KSC.

Facsimile (Magnafax) facilities will be available in building 45 for the purpose of transmitting the official request and response forms and for transmitting other pertinent data. Voice communications for Mission Evaluation Room

The following circuits will be available from September 11, 1972, through launch. (Exceptions are noted in items c and d.)

a. Monitor Circuits:

CSM	-		LM	Ĺ
OIS 212 OIS 213 OIS 214 OIS 215 OIS 216 OIS 221 OIS 222 OIS 223 OIS 224 OIS 225 OIS 226 OIS 227	MSTC Instr Comm G&N RCS Pad Leader TPE EPS F/C Cryo SCS SPS ECS	OIS OIS OIS OIS OIS OIS OIS OIS OIS	231 232 233 235 236 237 242 243 244 245 246 252	Pad Leader STE EPS SCS RCS ECS LM STC Instr Comm G&N Prop Trouble-shoot
ois 268	Trouble-shoot			

b. Monitor and Talk Circuits:

OIS 268 CSM trouble-shoot OIS 252 LM trouble-shoot Apollo Chief Engineer (longline GP58254)

- c. From September 11 to T minus 3 hours of the Flight Readiness Test¹, OIS 212, 221, 222, 268, 242, 231, 232, 252, and Apollo Chief Engineer lines will have full-time monitoring capability. The systems circuits listed will be monitored on four² additional lines as requested by the Mission Evaluation Room.
- d. From T minus 3 hours of the Flight Readiness Test until the end of the Flight Readiness Test, from T minus 9 hours of the CDDT until the end of the Dry CDDT, and from T minus 9 hours to the terminal count until launch, OIS 212, 222, 242, 232, Flight Director, and Apollo Chief Engineer lines will be monitored full time. The systems circuits listed will be monitored on 10 additional lines as requested by the Flight Controllers. The CSM Comm 214 Launch Conductor circuit will be on one of these lines during the final part of the count.

¹Also after the Flight Readiness Test except as noted in item d. ²Ten additional lines after the Flight Readiness Test.

The following circuits will be available from launch to end of mission.

a. Monitor Circuits:

Flight Director
GOSS Conference
GOSS 4
ALSEP Systems
ALSEP Net
ALSEP GOSS
PI Coordination
Air-to-ground-2 (GOSS 2)
GCTA Coordination
AFD Conference
Science Coordination
Sim PI
EO Conference
SSR Conference

b. Monitor and Talk Circuits:

Apollo Chief Engineer MIT Engineering

¹These loops are monitored in building 45 only during the lunar orbit portion of the mission.

TABLE A-I.- MISSION EVALUATION TEAM

NAME D. D. Arabian, Manager	Office Code PT		Home phone 333 4707
Mission Evaluati	on Team	Coordinators	
D. Camp D. Suiter W. Andrews A. Reubens O. Stafford R. Gadbois T. Libby T. Grace C. Laubach D. Hamilton J. Mechelay J. Lobb	PT7 PT4 PT14 PT14 PT14 PT14 PT4 PT4 PT14 PT1	6161 4549 2074 2074 3645 4549 4549 4549 2074 2074	479 1,953 479 2436 488 0597 488 0053 334 2423 333 3258 482 7967 946 4206 723 2984 337 1938 664 0740
Telecom	municati	ons.	
Team Leaders R. G. Irvin, Analysis Manager A. D. Travis E. E. Lattier	EE13 EE7 EE13	4647 4436 4649	482 2222 534 2053 534 2756
MSFN Communications C. L. Royston B. G. Myers R. B. Schuck J. Krafta J. C. Logan P. A. Ahlberg	EE7 EE7 LEC LEC LEC LEC	4436 4436 4905 6108 6108	487 2739 944 6142 482 3555 481 3102
CSM Communications M. B. Luse L. J. Davidson R. J. Ensley D. S. Eggers W. Dwinell K. Gilson C. Zemenick W. McQuerry	EEL3 EEL3 EEL3 EE3 NR NR NR NR	4647 4647 4647 2555 213-922-1856 213-922-1616 213-922-4828 213-922-1615	488 3620 877 2018 946 7004

TABLE A-I.- MISSION EVALUATION TEAM - Continued

Name	Offic code			e phone
LM Communications R. H. Dietz D. E. Rhoades D. M. Blackman H. D. Cubley L. Ottenberg E. Griffin	EE13 EE13 EE3 EE3 GAC GAC	4647 4647 2555 2555 516-575-7782 516-575-9401	482 488	3665 3085 0672 2248
Radar P. Rozas A. R. Cunningham E. Uttendorfer V. Welch R. Mark V. Pohl S. Boles E. Dickerson M. Zutek	EE6 EE6 GAC RCA RCA RYAN GAC TRW	3669 2189 516-575-2949 516-575-2179 3603 7351 516-575-1117 9-333-3133 9-333-3133	488 (617) (617) (714) x3201	5153 3912 933 3158 369 5392 442 3908
VHF Ranging P. W. Shores W. C. Panter Television	ee6 ee6	2189 2189		1063 2106
O. L. Graham W. E. Perry R. C. Edmiston P. P. Coan T. Devlin J. Stevenson	EE2 EE2 LEC LEC	4191 4191 4191 4191 2236 2336	471 643 488 944 336	7250 0696 4030 1028 9029 5697 berty)
Crew Communications R. W. Armstrong W. C. Morgan J. P. Anderson J. Feltus R. Black	EE2 EE2 RCA RCA	4926 4947 4057 4057 4057	877	6248 2119 0728

NOTE: The TV team will normally be located in building 440 during the mission with "hot line" telephone connection to telecommunications team leaders stationed in building 45, room 306C.

TABLE A-I.- MISSION EVALUATION TEAM - Continued

Name	Office code	Office phone	Home phone
Lunar Communications Relay Unit R. L. Sinderson J. D. Miller	EE16 EE16	4507 4507	946 0687 471 4390
C. Haddick	LEC	3761	944 4462
Lunar Sounder	_		100
W. C. Panter, Team Leader	EE6	2189	488-5907 481-3089
R. C. Kelly J. C. Sloan	ee6 ee3	5561 2555	461-3069 482-7134
J. Marushak	NR	2)))	405-11734
G. Covington	NR		
R. Jordan	JPL		
Crew Systems and Enviro	onmente	l Control System	
P. Hurt, Analysis Manager	EC13	4823	482 7837
F. Samonski	EC3	2171	334 1869
D. Hughes	EC3	5537	488 5569
W. Guy	EC5	2351	482 7318
Crew Equipment			
F. McAllister	EC7	4287	333 3590
N. Hadjigeorge	GAC	6182	1.08 2082
W. Reveley	EC7 GE	4278 4278	427 3973 488 4078
K. Gravois R. Hill	GE GE	4278	333 4705
K. HILL	GE	4210	222 4/07
Command and Service Module Environ			
H. Rotter	EC3	5536	488 6067
J. Ross	NR	213-922-1160	
W. Owens	NR TBC	213-922-3661 5536	334 1022
R. Young D. Stevenson	TBC	5536	488 2129
D. Buevenson	110	//50	,00
Lunar Module Environmental Control		_	1 -06-
J. Brady	EC3	5536	534 3867
J. Sheehan	GAC GAC	516-575-1455 516-575-1455	
R. Goalwin R. Holmes	GAC	516-575-1455	
D. Browne	TBC	5536	944 0853
B. Spain	TBC	80-618	482 1677
			

TABLE A-I.- MISSION EVALUATION TEAM - Continued

Name	Offic code	· · · · · · · · · · · · · · · · · · ·	Home phone	
Extravehicular Mobility Unit J. McBarron M. Carson J. Gibson M. Rouen J. O'Kane A. Gross T. Sanzone	EC9 EC6 EC9 ILC EC9	4451 3770 2351 3771 4451 2025 488-2762	474 4663 946 0319 944 3385 644 7407 482 7873 591 3057 333 2749	
Structures	and Me	<u>chauies</u>		
P. D. Smith, Analysis Manager	ES12	2626	946 1895	
Structural Analysis				
R. D. Schwartz R. Nieder S. Weiss G. Sanders R. Lusk J. Strakosch W. Hauck	ES2 ES2 ES2 NR GAC GAC	4391 4391 2276 2276 213-922-2168 516-575-7598 516-575-1781	643 1986 643 4889 645 2731 485 1509	
Structures and Mechanics				
P. J. Hanifin	NR	213-922-3768		
Recovery/Ordnance R. B. West C. H. Lowry	es4 Nr	3375 213-922-3156	6149 0277	
Docking/Mechanics R. D. White K. Bloom	ES4 NR	3375 213-922-2897	334 2289	
G. E. Campbell	NR	213-922-2897		
Thermal Control				
L. Palmer, Analysis Manager J. T. Taylor R. Harris R. Brown E. T. Chimenti	ES3 ES3 ES3 ES3 ES3	5589 5589 5589 3676 3676	334 2918 534 4142 488 4232 944 4622 333 3897	

TABLE A-I.- MISSION EVALUATION TEAM - Continued

Name	Office code	Office phone	Home phone
Thermal Cont	rol - Continu	<u>red</u>	
J. Orsag J. Janney B. G. Hall V. J. Mark G. W. Belshaw H. F. Walthall J. Rizzuto M. Durcan	GE 9-933 GE 9-933	· -	488 3354 488 5264
T. B. Mobley R. E. Seward J. A. Smith M. A. Melgares B. B. Welch P. C. Merhoff	TRW 9-33 TRW 9-33 ES3 TRW 9-33 TRW 9-33 NR 213-92	3-3133 x2711 3-3133 x2711 3676 3-3133 x2711 3-3133 x2381 2-4991	471 3240
J. E. Clawson R. M. Callahan C. F. Donham J. A. Utz	TBC TBC TBC TBC	80-275 80-275 80-275 80-275	488 5343 488 6857 471 5424 488 4328
Lunar Ex	periments		
J. Lowery, Analysis Manager H. Reinhold W. Tosh R. Miley	ED2 Bendix 313 Bendix Bendix	3827 -769-7235 ×37 5067 5067	482 1155 70 488 3395
Propulsion	on and Power		
H. White, Analysis Manager	EP12	2161	649 6795
CM RCS Dwayne Weary	ЕР4	4971	334 1181
Jack Capps L. Jenkins Nelson Lingle N. Glavinich J. Griffiths	EP4 EP4 EP4 NR 213-9	4971 5371 5371 22-1055 22-1055	488 4026 488 2659

TABLE A-I.- MISSION EVALUATION TEAM - Continued

Name	Office code	Office phone	Home phone
LM RCS Walt Karakulko Nelson Lingle A. Small D. Pearce		4971 5371 516-575-3792 516-575-3683	471 4844 488 2659
Jim Wood Don Freeburn John Griffin H. Gallanes R. Smith M. Glazer T. Lewin	TRW TBC	4571 2786 5189 213-922-1501 9-333-3133 x3171 80-605 213-922-4864	944 0343 333 2462 481 3984 482 3603 488 3154
DPS/APS John Hooper W. Hammock Eldon Currie John Norris Jann Homerstad Don Harvey Dan Pearce J. Salek T. Ervolina	GAC	2788 4571 4571 2788 80-604 9-333-3133 x6542 516-575-1193 516-575-1661	471 2685 482 7757 946 1923 488 2276 487 3666 670 1086
Fuel Cells/Cryo S. Owens D. Bell F. Plauche D. Hydrick H. McBryar W. Chandler R. Rice R. Allgeier W. Simon J. Smithson J. Williams C. Bouman R. Fritz	NR 2 P&W	3286 3286 3286 3286 3286 4771 4771 4771 4771 213-922-3683 213-922-1160 333-2162	544 3011 333 2340 474 2660 487 2591 534 5246 534 3118 481 0043 333 4627 333 3508 482 7604
R. Reysa W. Patterson R. Hautamen	TBC TBC TBC	80-605 80-605 80-605	488 2841 333 4776 333 1664

TABLE A-I. - MISSION EVALUATION TEAM - Continued

Office code	Office phone	Home phone
GAC 516-	575-1240	337 2777 944 2959 946 8263 534 4783
EP4 EP4 GAC 516-	5371 5371 575 - 1240	649 2558 487 1656
al Systems		
GAC 516- NR 213- NR 213- NR 213- NR 213-	575-1115 922-4922 922-4921 922-3441 922-2238	554 3937 644 3585 482 7043 481 3086
EB8 GAC 516- NR 213-	3071 575-9629 922-1135	488 2679 946 3570 644 7423
	EP5 EP5 EP5 EP5 GAC 516-9 GAC 516-9 EP4 EP4 EP4 GAC 516-9 EB3	Code phone EP5 5361 EP5 5361 EP5 5361 EP5 5361 EP5 5361 NR 213-922-3441 GAC 516-575-1240 GAC 516-575-1115 EP4 5371 GAC 516-575-1240 EB3 3171 EB3 3171 EB3 3173 EB3 5814 EB3 3173 EB3 2497 EB4 2497 EB4 2497 EB4 2497 EB4 2497 EB4 2497 EB4

TABLE A-I.- MISSION EVALUATION TEAM - Continued

Name	Office code	Office phone	Home phone
Control and Displays			
A. Olsen A. Campos J. Alexander A. Farkas H. Horii R. Lavey J. Dannenhoffer	NR 213-9	3171 2497 3466 2848 922-3441 922-4912 575-1117	334-3270 334 1395 488 3650 472 2862
Guidance	and Control		
C. Finch, Analysis ManagerR. WilsonG. SilverG. Wachholz	EG7 EG8 MIT Delco	3991 4535 4807 4395	944 6133 488 4139
D. Rue A. Sohler D. Anderson	TRW 9-3:	33-3133 ×2651 922-3232 575-1535	333 2583
SCS			
O. Littleton	EG8	4535	944 3244
Guidance and Navigation			
M. Holley S. Snipes R. Parker	EG14 EG8 EG8	2391 4535 4535	877 3355 444 6618 333 2253
Abort Guidance System			
P. Kurten	EG8	4535	334 1961
Flight (Spacecraft Stowage	Crew Support	Equipment)	
H. Kuehnel, Analysis Manager C. Perner G. Franklin K. E. Shaw, Jr.	CD15 CD15	3709 4171 4171 372-2151	474 3358 482 7079 334 2853
CSM & LM	Experiments		
R. Lanier L. Leopold	FC8 EE3	2468 2128	534 6246 649 8015

TABLE A-I.- MISSION EVALUATION TEAM - Continued

Name	Office code	Office phone	Home phone
Lunar Ro	ving Vehicle		
R. Battey, Analysis Manager D. Pendley	PD PG	4811 4358	333 2921 258-5622
SIM Bay	Experiments		
R. L. Giesecke, Analysis Manager G. Pels R. Fenner B. Mollberg E. Walters L. McFadin R. T. Walter	ED ED EB8 EE6 EB8 EB8	3811 3811 3811 2846 5561 2846 3466	585 5489 333 2701 481 2164 332 3626 474 5074 488 3867 334 2754

Support personnel not assigned to Team:

North American Rockwell

Mission/Trajectory - B. C. Johnson	(Mgr.)213-922-4223
Performance/Procedure - J. Potts	213-922-1621
Consumables/Power - R. Schaefer	21.3-922-4974
Experiments - D. Patterson	213-922-1956
Reliability - J. Stungis	213-922-5354
Systems Integration - E. E. Dale	213-922-4425
Integrated C/O Proc P. Hitz	21.3-922-3639
F. Hirahara	213-922-2210
Room Captain - E. Jiblits	213-922-3777

The North American Rockwell point of contact for prelaunch support during normal and off-duty hours is F. M. Patterson (office phone 333-2030, home phone 333-3572), or the Mission Support Room at Downey. Contact of North American Rockwell personnel and command and service module vendor personnel if F. Patterson is not available and the Mission Support Room at Downey is not in operation is limited to the following personnel.

G.	Jeffs	213-922-2415	(213)862 7238
G.	Merrick	213-922-2951	(213)379 4852
E.	Smith	213-922-3425	(213 397 7048
в.	Boykin	213-922-3501	(714)993 0493

TABLE A-I.- MISSION EVALUATION TEAM - Concluded

Name

Grumman Corporation	Office Phone	Home Phone
Mass Properties - Fred Hyatt Materials - George Young George Hendry	516-575-1475 51.6-575-7700 516-575-7782	
Mission Analysis and simulation - Rudy Schindwolf Reliability - Don Smith Mission Support - Ray Pratt Joe Pruden Vehicle Design - Bud Phillips and Integration - Phil Thorjusen	516-575-2704 516-575-2011 516-575-1361 516-575-9933 516-575-6183 516-575-2410	

Comments

The GAC Houston point of contact is R. Monscko, x4667; therefore, he should be consulted during normal working hours if prelaunch support is required.

The Bethpage Mission Support Room (MSR-B) is always manned during normal working hours. If R. Monscko is unavailable, then the following personnel should be contacted in the MSR-B at x9933.

- R. Pratt
- J. Pruden
- W. Parker

During off nominal hours, when the MSR-B is not manned, contact is limited to the following personnel:

W.	Bischoff	516-423-2974
F.	Elliot	516-427-6399
В.	Gaylo	516-921-7245
J.	Strakosch	516-261-2985
J.	Marino	516-261-1570

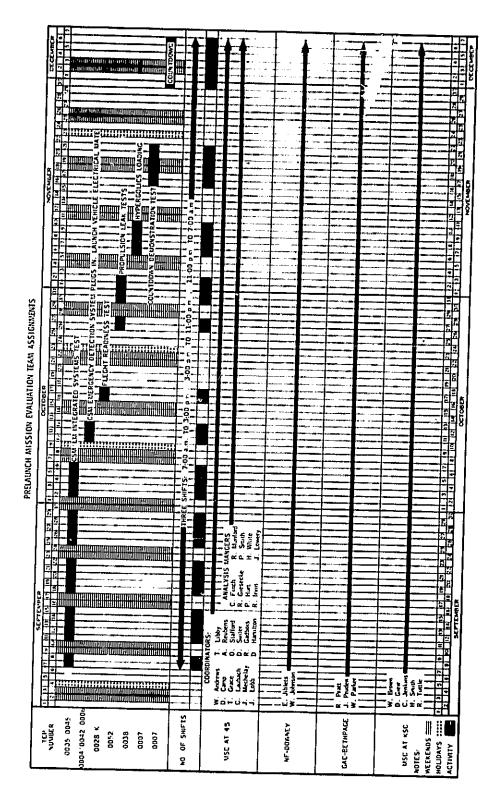


Figure A-1.- Prelaunch mission evaluation team assignments.

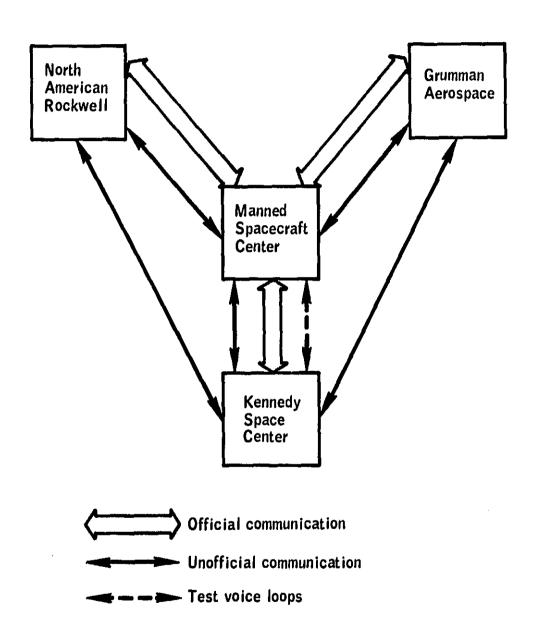


Figure A-2.- Voice links.

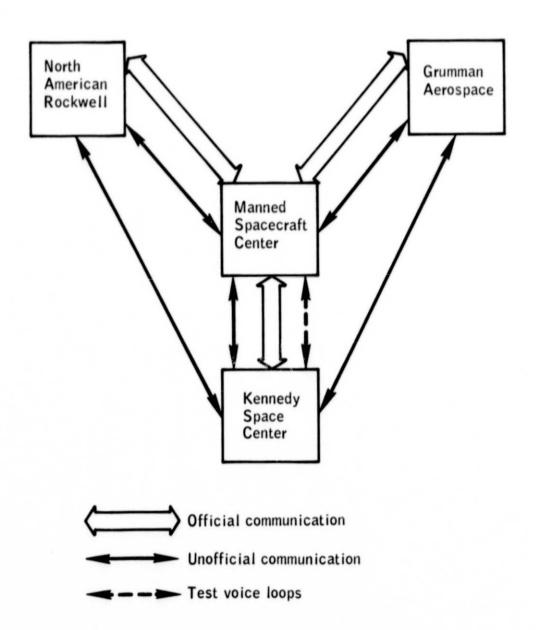


Figure A-2.- Voice links.

KSC REQUEST	and the second security of the second se	STATE OF THE PARTY
REQUEST ORG.	CONTROL NUMBER	
ACTION REQ'D BY (TIME) EST: (KSC)	REQUESTER	
SUBJECT:	CONCURRE	ICE
THE PURPLE OF THE COURSE OF TH	SYS, SPEC	. COilt.
	PROJECT E	KGR.
TO THE COMMENSATION OF THE STATE OF THE STAT	RASPO	
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REF. IDR.		
		ķ

Figure A-3.- KSC request form.

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CONTROL NUMBER	RESPONSE ORGANIZATION	**************************************
		CONGULTANCE KSC TEAM LDR. TIME SYS. SPEC. CONTR. TIME PROJECT ENGR.
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The state of the s		
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MISS.EVAL.MGR. TIME	SENIOR CONTR. REP	RASPO

Figure A-4.- KSC response form.

MSC REQUEST		SAC.
REQUEST ORGANIZATION	CONTI NUMBI	ROL ER
ACTION REQ'D BY TIME (EST): (KSC)	REQUE	ESTER
SUBJECT:		APPROVAL
THE COLUMN TO THE COLUMN THE SECRET S		MISS. EVAL. MGR.
The control of the co		TEAM LEADER
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Figure A-5.- MSC request form.

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Figure A-6.- MSC response form.

PART B - PLAN FOR CONTINUOUS MISSION SUPPORT OF APOLLO 17 BY THE MSC MISSION EVALUATION TEAM

SCOPE

During the mission, the NASA and contractor engineering and system specialists on the third floor of building 45 will provide continuous (24-hour) real-time support to the Spacecraft Analysis (SPAN) Room in building 30, and subsequently, to the Mission Operations Control Room (MOCR). Operations will commence at T minus 9 hours in the countdown.

RESPONSIBILITIES

The MSC Mission Evaluation Team will be responsible for responding to all queries made through the SPAN system and providing resolution of inflight problems. Further, this group is responsible for the evaluation and analysis of all flight data, the resolutions of all problems, and assisting in preparation of all postflight reports which are the responsibility of the building 45 support teams.

ORGANIZATION

The technical support to be provided by NASA and contractor personnel in building 45 has been integrated and grouped into several teams supervised by Analysis Managers assigned from MSC. Table B-I contains a listing of the teams, Analysis Managers, and supporting personnel. The Mission Evaluation Team organization is defined as follows.

EVALUATION TEAM MEMBER DUTIES

Evaluation Team Manager

The Evaluation Team Manager is responsible to the Apollo Program Manager for the overall planning, direction, and coordination of all mission support activities in building 45. The Team Manager is also responsible for the postflight evaluation activities. In addition, he is the single point of contact between the Mission Evaluation Team and the SPAN Room.

Deputy Manager

The Deputy Manager assists the Team Manager, and in his absence, assumes all the Team Manager's duties and responsibilities.

Shift Manager

Each Shift Manager is responsible to the Team Manager for the direction of the Mission Evaluation Team during the specific shift to which he is assigned.

Assistant Manager

The Assistant Manager for each shift assists the Shift Manager in carrying out his responsibilities.

Data Manager

The Data Manager for each shift is responsible to the Team Manager for all data processing, handling, and distribution of hard-copy data supplied to the system specialists.

Contractor Senior Representative (NR/GAC/Bendix)

The Contractor Senior Representatives are responsible to the Team Manager for the effective utilization of all contractor resources.

Contractor Data Coordinator (NR/GAC)

The Contractor Data Coordinators are responsible to the applicable Contractor Senior Representative and Team Manager for the coordination of data exchange with the contractor facility.

Engineering and Development Directorate Senior Representative

The senior representatives of the MSC Engineering and Development Directorate are responsible to the Team Manager for the effective utilization of the resources of their directorate.

Analysis Managers

The Analysis Managers are responsible to the Team Manager for directing and coordinating the mission evaluation activities of their respective teams.

BUILDING 45 INTERFACES

The Mission Evaluation Management Team (table B-II) will interface with the SPAN Management Team (table B-III) and with the Contractor Team in the Mission Support Rooms at the Grumman Aerospace Corporation (Bethpage, New York) and at the North American Rockwell Corporation (Downey, California). The primary points of contact between building 45 and the SPAN Room are the Evaluation Team Manager and the SPAN Operations Manager, respectively. The SPAN/Mission Evaluation Request forms (figs. B-1 through B-5) shall be the official coordinating documents for action requests and responses between building 45 and Spacecraft Analysis Room mission monitoring personnel. Exchange of data between the building 45 activity and a contractor's facility is the responsibility of the appropriate Contractor Data Coordinator.

DATA

General

The data available to the systems analysis personnel operating in the Mission Evaluation Room (fig. B-6) are essentially those which are available to the flight ontrol organization in the Mission Control Center. Typically, these data include the telemetry and voice information received by the Mission Control Center from the Manned Space Flight Network and Goddard Space Flight Center. The GOSS-conference loop and other voice channels are also linked to building 45. Tables B-IV and B-V summarize by measurement the telemetry data available to the Mission Evaluation Team, by telegraph, by television, and by near-real-time and postmission reduction.

Television Data

Eleven television channels, four selectable and seven fixed, are available for viewing real-time data formats on 17 monitors located in the Mission Evaluation Room and support rooms in building 45. The Data Manager will select, in coordination with the Team Manager and Senior Engineering and Development Representative, the data formats on the four selectable channels and those switched to each video monitor.

The television channels referred to as fixed channels are reserved for constant display of the following systems:

- a. Guidance and navigation
- b. Electrical power and batteries
- c. Propulsion
- d. Environmental control
- e. Thermal control/scientific instrument module experiments
- f. Communications.

These channels are slaved to and controlled by the Mission Control Center and will not be used for call-up of special data. During periods of LM inactivity, the fixed LM channels are switched to CSM formats. During the period of scientific instrument module experiments operation, the thermal control television channel (line) is shared with the scientific instrument module experiments personnel.

Polaroid camera facilities will be available when hard copy of data formats are needed quickly. Error codes used on the data formats are shown in table B-VI.

Telegraphic Data

The telegraph summaries are tabular form printouts (summary message enable keyboard rebroadcasts) and will be available throughout the mission. Preliminary copies of the various formats have been distributed, and cardboard overlays will be available prior to the mission for reference by the various system personnel assigned to the Mission Evaluation Room. The data will be sorted and delivered to the appropriate system groups (table B-VII). Prior to the mission, each Analysis Manager should inform the Data Manager of any changes in his requirements for summary message delivery. Essentially, the printed data will be delivered within minutes of its reception from the Manned Space Flight Network.

Recorded Data

The primary source of recorded data for near real-time mission support and postflight evaluation will be THRIFT (System Telemetry History Report in Formatted Tabulations). THRIFT will be printed out every 4 hours in building 30 and will be available for review in the Data Library

(room 345, bldg. 45). System data reduced from range tapes will be available after the mission as required to support the evaluation of specific anomalies. Standard tab groups are defined in tables B-IV and B-V, updates for which will be issued 30 days before the mission.

Apollo lunar surface experiments package (ALSEP) data in the form of high-speed printer tabulations will be delivered directly from building 30 to the Mission Evaluation Team by messenger. Special requests for other experiments data will be submitted to the Data Manager.

Documentation

The Data Library has on file all available documentation for Apollo 17. Personnel are on duty continuously during the mission and during normal working hours for the evaluation period.

MISSION EVALUATION REVIEW REQUIREMENTS

The following reviews are conducted for each mission:

- a. Mission Evaluation Team Manager premission briefing for Analysis Managers
- b. Flight crew technical debriefing report review by Analysis Managers
 - c. Flight crew systems debriefing to technical specialists
- d. Mission Evaluation Team Manager summary review with Analysis Managers
 - e. Apollo Program Manager review of mission report.

SECURITY REQUIREMENTS

Access to the third floor of building 45 will be restricted during the Apollo 17 mission. All personnel requiring access on a continuing basis will be badged. The badging identification will be as follows:

- a. Mission Control Center green badges with names printed thereon authorize access to the third floor of building 45 and room 306C.
- b. Building 45 third floor access badges (black on white) with black numeral 17 authorize access to the third floor of building 45.

The third floor of building 45 will be controlled by a security guard stationed at the elevators. The third-floor stairway doors will be locked during the mission. At the request of the Analysis Managers, the Team Manager or his designee will arrange with the guard for access of technical specialists as the need for their support arises. The Analysis Managers are responsible to the Mission Evaluation Team Manager to insure that the total number of personnel is held to a minimum to avoid an overcrowded and noisy condition.

MISSION EVALUATION ROOM FACILITY ASSIGNMENTS

Specific seating assignments for the Mission Evaluation Team are defined in figure B-6. Room assignments and telephone numbers are defined in figure B-7.

Mission Report Requirements and Responsibilities

The Apollo 17 mission reporting requirements are defined in Apollo Program Directive no. 19C.

A summary of the reports to be generated by the Mission Evaluation Team is as follows:

Building 45 status reports. - A status report keyed to significant flight events and approximately every 2 hours during the mission.

Analysis of propulsion system major firings. - A verbal report to the Mission Evaluation Team Manager and input to the 2-hour status report. Propulsion analysis personnel will be provided with real-time or near-real-time high-bit-rate data for assessment of propulsion system firings. Special procedures are also being implemented for the timely assessment of these data.

<u>Daily Mission Reports.</u> A description of the events of the preceding 24-hour period, including mission progress, accomplishments, systems performance, failures, and anomalies.

Five-Day Mission Report. - An abbreviated "quick look" description of the mission, including primary mission and test objectives accomplished, as well as significant failures and anomalies.

Thirty-Day Failure and Anomalies Listing Report. - A complete report describing all significant failures and anomalies, including time of occurrence, mode or cause, and results of failure analysis; and, in addition, the failure/anomaly criticality, subsequent mission impact/constraint, testing required to support corrective action, and final resolution.

Final Mission Report. - A complete and detailed report covering all mission aspects from launch through recovery. (Publication date is 90 days after end of mission.) Significant topics covered are:

- a. Spacecraft configuration, trajectory, and sequential events
- b. Spacecraft, systems, and equipment performance
- c. Assessment of mission objectives
- d. Recovery operation
- e. Failure and anomaly analysis/resolution
- f. Scientific experiments
- g. Crew's report of the mission.

MISSION REPORT SCHEDULES AND PROCEDURES

The schedule of reporting for the Apollo 17 mission is shown in figure B-8. This schedule indicates when each portion of the report is to be submitted by the Analysis Managers to the Test Division (PT2) as well as the anticipated publication date of each report. The flow of the individual report inputs within the Test Division is shown in figure B-9. As sections are drafted by the Analysis Managers, each section (or subsection) will be delivered to the Branch Secretary, PT2, who will log the submission and reproduce a record copy for incorporation into a loose-leaf notebook. The notebook will be available at all times to interested parties.

TABLE B-I. - APOLLO 17 ANALYSIS AND TEAM MANAGERS IN BUILDING 45

Engineering and Development Directorate

- R. Burt, E and D Senior Representative
- L. Chauvin

Telecommunications

- R. Irvin, Analysis Manager
- A. D. Travis
- E. Lattier

Crew Systems

- P. F. Hurt, Analysis Manager
- F. A. Samonski
- D. Hughes
- W. Guy

Electronic Systems

- R. Munford, Analysis Manager
- A. Olsen
- A. Campos
- J. Alexander

Propulsion and Power

- H. White/R. Ferguson, Analysis Manager
- C. Gibson
- R. Taeuber
- W. Dusenbury

Guidance and Control

- C. Finch, Analysis Manager
- P. Kurten
- O. Littleton
- R. Parker
- S. Snipes

Structures and Mechanics

P. D. Smith, Analysis Manager

Thermal Control

- L. Palmer, Analysis Manager
- J. T. Taylor
- R. Harris
- R. Brown
- J. Janney

TABLE B-I.- APOLLO 17 ANALYSIS AND TEAM MANAGERS IN BUILDING 45 - Concluded

Apollo Lunar Surface Experiments

J. Lowery, Analysis Manager

Flight Crew Support/Spacecraft Stowage and Photo Equipment

- H. Kuehnel, Analysis Manager
- C. Perner
- G. Franklin

Trajectory

E. D. Murrah, Analysis Manager

SIM Bay Experiments

- R. Giesecke, Analysis Manager
- R. Fenner

Lunar Roving Vehicle

- R. Battey, Analysis Manager
- D. Pendley, Project Engineer

Extravehicular Activities

D. Schultz

Inflight Demonstrations

F. Laurentz

Science and Photography

- R. Baldwin
- J. Bates

CSM and LM Experiments

- R. Lanier
- W. Panter
- L. Leopold

TABLE B-II.- APOLLO 17 MISSION EVALUATION MANAGEMENT TEAM (BUILDING 45)

	Team Manager, D. D. Arabian Deputy Team Manager, R. Colonna	Arabian • Colonna	
Position	Shift 1	Shift 2	Shift 3
Shift Manager	J. Mechelay	R. Clickner	R. Gadbois
Assistant Manager	A. Reubens	T. Libby	D. Suiter
Data Manager	G. Foster	C. Walsh	T. Grace
NR Senior Representative	B. Boykin/D. Llorente	F. Patterson	M. Silver
Bendix Senior Representative	L. Lewis	W. Tosh	H. Reinhold
GAC Senior Representative	J. Marino	Marino/Strakosch	J. Strakosch
NR Data Coordinator	W. Fitzpatrick		
GAC Data Coordinator	L. Gran	Gran/Moncsko	R. Moncsko
E&D Senior Representative	L. Chauvin	Chauvin/Burt	R. Burt
R&QA Senior Representative	C. Rice	J. Johansen	E. Fields

TABLE B-III.- APOLLO 17 SPACECRAFT ANALYSIS MANAGEMENT TEAM (BUILDING 30)

Team Managers,	S. H.	Simpkinson and R. Kohrs	
Position	Shift 1	Shift 2	Shift 3
SPAN Operations Managers	S. Simpkinson	R. Kohrs	R. Battey
SPAN Assistant Manager Operations	J. Lowe	D. Nebrig	G. Coultas
Mission Staff Engineer	D. Segna	S. Blackmer	
SPAN Log Manager	H. Statz	J. Wise	N. Stewart F. Hopson
Administrative Support	R. Bailey/ G. Poinier	Bailey/Poinier/ Rayl	J. Rayl
SPAN Documentation	H. Tash	Tash/Davis	H. Davis
NR Management Representative	G. Jeffs/ G. Merrick	E. Smith	M. Vucelic
GAC Management Representative	W. Bischoff	F. Elliott	J. Marino
MIT Management Representative	P. Felleman	G. Silver	R. Larsen
MSFC-LRV Senior Representative	M. Harrington	J. Sisson	
Orbital Science Team Leader	R. Baldwin	Baldwin/Eichelman	D. Townsend W. Eichelman
Surface Science Team Leader	J. Lovell	Lovell/Sevier	J. Sevier

TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY

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TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

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GC4371X	EAT 5 NORM SE		OFF	OH	103909 ² F								41	50	<u>15-</u> 1		
cc437éx	DAT 6 B/U BE		OFF	CI	10300982								41	5J .	TE-1		!
0099610	FAT 1 MAL		ARS	PRS	10341000								41	50	LE-L	i.i.	1 ₀ 03
	eat 2/kg tal		AES .	FRE	1031-1003								41	50	EE−1		Heba.
	BAT 3/ICR BAL		ABS	Has	10341007	ŀ							4.1	. 50	IE-I	+ 1 1 ps	4003
02:30640 02:30650	PAT 4 MAL		APS	PRS	10341002								41	50	EE-1		400# 400#
3C9=16U	EAT 6 MAL		ABS	FRS	1034100C								41	 50	IE-I	1001	14007
GP0500P	DES H2 TK2 FRESS	PSIA		EО	1047069	1	.2	.2	1			70	ezp		LF-6	1001	4113
G: 1584:P	DES OZ TKZ FREIS	PSIA	o.	3000	1047037	ı			1			70	220		LP-ĉ	1001	
GF1083%	SUIT PAR 1 MAL		no	YZS	10070098H					[42	50	IE-1	1001	410I
GE10 ₆₇ X	SUIT WAN 2 WAL		1:0	YES	10070986								1.3	50	TE-T	1001	L ₁₀ 1
GF 1201X	COM SUIT DISC		FLOW	DISC	16040989	. · ·							ŗΞ	50	IE-1	1231	4120
GF120ZX	11/P SUIT DISC		F£0¥	DISC	100\0986	!							42	50	IE-1	1001	F100
GF1211X	SUIT REF CLSD		uot Clad	CLSD.	1007098F								42	50	<u>LE-1</u>	1051	
GE 1212X	SUIT ALF OFER		NOE OPN	0ES	10070982			.]) 		42	50	IE-I	2051	l Naviona
GF1221X	SUIT DIV ECRE:S		OFII CAL	ECH	10070980	. * 							ևը	52	IF-1	lear	4100
GE1231X	CABIN RET CLED		CLSD HOT	clsr	10050958			٠.,					1.2	50	LE-1	1051	·.'" .
1 1 1 1	CAHIN RET OPEN	, ,	384	1FTC	10050923	7.4					:			· · · 1	E-1	,,,,	
	SUIT TEMP		FRI 20		1007098C	1	.1	.1	1	1	. ;	70	22A		IE-1 LP-5	3.4	100 1
	SUIT PRESS	o _p PSIA			103-063	1	1		1	22.		7ú					100
	CO2 PART PRESS	Mario		30	1005037	1	.1		1	1		70	22A		LP-5		4100
	CABLIT TEMP	٥,	20		103/1005	1	.1	.1	1	1		70	223		LP-5	1001	4101
L1		<u>l </u>			1			.		1				\preceq			

TABLE 8-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

Numbe	Measurement Title	Uni		pprox, ange	Loadin number				N for rate:	mat 5 5/8)	Sur ma TVVX nur bi	1	PC ana tabs ulo	log and	Strip chait record setup	Primary MSK fore at	13.114
			Lov	v Hig	h	,		7-	T.	T	Т	Ì	- -	sto]	5P	110	no.	1.0.
		[1]				1	7		7				7	7	-			 ,
6 1 L	A Company			1		1				ĺ		•		J		[-	. 25,	. 1.
12	(2) (P9) 42	- 1 ·			1.				1	1			ı	- 1				1
7 - 3 13 X	The first of the second			.:					ļ	ĺ	1		1					
8 . E . X	5 54 es.t		l.	IT.					ļ	l			-	.			• • :	
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Çeri sa	10 F - F14 d - C15 N			61°	115454		ľ	ľ					1			11	1 1	11.73
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n System	the to make	15:14		3:0	1104				1			*1				£2 ·	1.	•1 •
159 4 10	1980 ALE TREADS	PCM			12:19:4				i	ì	ı	1	177			.1•"	1 14	+1 -
93. 81	A Market	iota			1 1-1-1							70				ij.	. 1	N.E.B.
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895.0 11	e godin. Hoo ivers	1554	,	5.5	1000005										1	[j	01/0
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u'i 12I	Autority men	IT: IA	a	1, 1	1 - 117	1		,]		.1:•
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460 2	Accest . His temp	u _k	ارو _{د د} یو	9 2.35	1334357	1	.1.	, i	.	ι			- C		si Si	}		
Ji konsti	FILT Accide to		uern	DOM:	13.54.09									\	İ			k-u
229/U	ora fone mess	EBIV	3	6.5	1995101	,		: ,				<i>(</i>)			LI	1	- 1	i a
10 9 8U	SULECTED COOLART	, E	دع	100 J	1 997 JON	1	ن, 🕽 ف					71	- 41		LI			11
เจารม	HON SEP RATE	ata	,	34,51	1007064	1	1 .5	١,	1			za .	A. D.		Li	- }		
VO46	PLC TO A CLT	vac	9+	135	L>0136.4	ı .	. 1	1	1,			,	2 3 1					
1107	4.9 VDC TH FIAG	VDC	٥	5 1	.30 <u>7</u> 5%	₁ .		,	,			n .	4.		Lin		i	
201A	THE UP YAC BOO	VAIC	s)	31 1	033.137	ı .	,	1	1			1	. A		1			
331V	irio amp 9.a ko	AETE	o	31 1	89235 7	.	1	1	1		7	1	;A		LP-	1		9.5
513x :	im olex		opp	ch l	10-195								iąj.	50	LE.		.4,	- 1

TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

	Measurement					T			- 1.55		<u> </u>		Γ.		1	 	Γ
Number	Title	Unit	Appi ran		Loading number				N for rates	mat s S/S	. :	Summary TWX number	an tab: pl	CM alog s and lots	Strip chart record setup no.	Primary MSK format no.	Thrift tab no.
ļ			Low	High		1	14	5	10	30		ļ	STD	5P			<u> </u>
GG1523X	LCC OFR	: '	OFF	OH	1008098								45	50	LE-2		4435
GG2001V	X PIFA OUT IN FH	VRMS	-2.5	+2.5	5101058	,L	.2	,e	1	50				314	LP-18		4455
COSCSIA	Y FIPA CUT IN PH	VP:S	-2.5	+2.5	5101057	ı	.2	.2	1	10				31A	12-18	:	4455
GG2041V	Z PIFA OUT IN FH	VELS	-2.5	+2.5	5101059	ı	.2	.2	1	10				31A	LP-18	*	4455
GG2107V	IC SVO ERR IN PH	VPI S	-3	#3	1201017	10	1	3	5	50) ;		:	314	LP-18	. 17	4460
GG2112V	ic rsvr out sin	VRMS	-20	+20	1102099	1	1	1	1	10				318	LF-9		4460
GG2113V	IC RSVR OUT COS	VRIAS	-20	+20	1102067	1	1	1	1	10				313	10-3 LF-19		1460 ·
GG2137V	MG SVO ERR IN FH	VRMS	ą.	+7	1201019	10	1	3	5	50				31A	10-3		
						-						:		-	EF-18		4460
GG2142V	MC RSVR OUT SIN	/RI-S	-50	+20	110503/1	1	1	1	1	10		 		313	LO-3 LP-19		4460
GG2143V	MG RSVR OUT COS	Vavs	-50	+20	1002101	1	1	ı	1	1.		. :			LD-3 LP-19		4460
GG2167V	OG SVO ERR IN FR	VRMS	-3	+3	1201030	10	1	3	5	50				31A	10-3		
032172V	OG RSVR OUT SIM	VRMS	-20	+20	1103067	1	1	1	1	10					LP-18		4460 !
			-				-								EF-19		4460
GG2173V	og Rsvr out cos	VRIAS	-50	+20	1017101	ı	1	1	1	1					10-3 17-19		4460
GGSS19V	PITCH CDU DAC OUT	DECS	-20	+20	1104068	ħ.	2	3.	5	10				31c	10-1 LF-20		44 <u>20</u>
GC2249V	YAW CDU DAC GUT	DEGS	-20	+20	1102100	ĵŧ	2	3	5	10				310	IO-2,1 LP-20		11450
GC2279V	ROSE COU DAC OUT	DEGS	-20	+20	1103066	4	2	3	5	10		70			10-1,2		
															17-20		4420
GG2300T	PÍFA TEMP	o _F	120	140	1032101	1	.1	1	1			71	23A	29C	LP-9	1137	4450
GU3304V	RR SHET SIN	VRMS	-22	+22	23.04065	1	1	1	1	10					LP-20 LO-3		4470
GG3305V	RR SHET COS	VAMS	-55	+22	1102035	1	1	,	1	10				310	PB-50		
- [AR TRUN SIN	VEUES	-22			1	1	. I		10				31C	[25-20]		6470
GG3325V	RE TRUN COS	VRUS	-22	+22	1103035	1	1	1	1	10				31C	LP-20		4470 bizo
						- [[1	10-3		4470
	LCC HARNING ISS WARNING		ABS		1003098H							1,545,154,155	45		10-3 12-7		4435 4450
	OUT LET		ABS NO.		10030986 10370981			- [45 44	· .	ID-1		
					110704			1					7	"	E-2	A 5	4316
G:12114X	AUTO ON	}	πo	YES	10205BH		1					.ey #1.	44	50	E-2		4330
		<u> </u>									1			-1	<u> </u>		

TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

	Measurement			<u></u>		Γ.,									<u> </u>		
Number	Title	Unit	Appr		Loading number				V for rates	nat S/S	÷	Summary TWX number	ana tabs pl	CM Llog and ots	Strip chart record setup no.	Primary MSK format no	Thrift tab no.
			Low	High		1	1,	5	10	30	_		STD	5P			
GH1217X	AUTO OFF		110:	YES	1037098G		. 4.						1,14	50	re-s	1123	£330
GH1530X	AFS ARM		110	YES	1047095Н								lili:	50	TZ-S	LGOL	4351
CHISTON	x Trais CMD y Trais CMD	VDC.	-10 -10	10	1101065 1102033	ı	Ţ	1	1	10 10			.43 43	32A. 32A	LP-21 LP-21		4340 4340
GH12427	Z TRANS CMD YAW LC IMPUT ERR	VDC	-10	10	1103033	1	1	1	l	10		i. •	1+3	324	LP-21		4340
		VIIG.	3	-3	1036101	4	. 1	1	1	1		/ γ1		324	LD-1 LP-21	1753	4340
GH1548A	FINCH LC INFUT ERR	VDC	-13	13	1040101	14	1.	1	ı	1		71		321	LO-1 LP-21	1123	11340
GH1249V	ROLL LC INFOT ERR	VDC	-1 2	13	1045101	1.	1	1	1	1		71		35V	F5-51 F0-T	1153	4340
GH1260X	ARS ON A LONG TO THE TOTAL TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL THE TOTAL TOTAL TOTAL TOTAL TOTAL TO THE TOTAL T		OFF	ON .	5101024H]. 					ijų.	50	to-2	1001	4331
GH1283X	AIONT STAGE		No	YES	51010240								F+14	50	. 2-2	1001	4331
3HTS89X	eng fir stage		ю	YES	1037098F			:					и.	50	E-2	1753	4320
3HT30FX	DPS ON		OFF	OH	10290983								μ,	50	Œ-5 Œ-2	1125	433L
GH1311V	van thrust cad	PCT	2	15	1035005		l.					71.		32B	10-2 10-22	1123	4325
191313V	PITCH GDA POS	VRMS	-17	+17	1006101	1	1	ı	1:	1		71		321	LO-2 LO-2	1001	4320
3113174A	ROLL CHA POS	VRMS	-17	+17	1003101	I.	ı	1	1	L	1	71		325	In-2	1001	
CH1323X	R TRM FALL		no	YES	10290985										LP-22		4320 -
GH1330X	r tam fall		110	YES	10290982		: 1			1			14 44	50 50	72-2 72-2	1001	4320 4320
GH1331V	Auto Thrust Chd	VICC	٥	12	1045069	1	1	1	1	1		71		328	T5-55 T0-5	1123	4325
C#1131+8X	DPS ARM		110	YES	1047098					1			44	50	IZ-2	1123	4325
2H1416V	THE OUTERT	1			1201008A	£	ı	1	ı	10	 -		43	8	10-1,2 10-5		,
													,		I3-3		4345
CH1419V	JDA4D OUTRE		OFF	OII	12010088					10		, Žiji	43		10-1,2 10-4 1E-3		11345
CSU1/150A	JDB4F OUTFUT		OFF	ON	12010481					10			1-3		10-1,2 10-5		4365
CSU7-STA	JD448 OREST		OFE	ON	1201048B								43		1E-3 10-1,2		43-5
								_]				 <u>144</u> 2			TE-3 T11-#	<u> </u>	4345

TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

Number			Measurement								***		-	Continto	T		1		
Color	Number		Fitie.	Unit									7	TWX	an tabs pl	alog and ots	chart record setup	MSK format	
CHAPTY JURGA OUTSUT	<u> </u>		<u> </u>		Low	High		1	4	5	10	30	_		STD	SP			
	CHIT/155A	JPA3U GUTFUT			OFE	OII	1201003c					16			43		10-4		1,31,5
CHILAGEV	GR1423V	JDB3D OUTFUT			07점	on	1501003D					. 10			43	: 	ID-5		4,945
GHLASSY JUNESPEC OFF ON 12010489	GHI42LV	JOHEA GUTPUT		. :	OFF	on	12010480								43		10-5		1,245
CHILAGO TREE OUTSUT CFT ON 12310082 10 10 13 10-1.2 1345	GH1425V	JDABR GUTPUT			OFE	On	1201048b								43		10-1,2 10-4		
GRIARY STARD OUTSUT OFF ON 1201008F GRIAROW JDARA OUTSUT OFF ON 1201008F GRIAROW JDARA OUTSUT OFF ON 1201008F GRIAROW JDARA OUTSUT OFF ON 1201008F GRIAROW JDARA OUTSUT OFF ON 1201008F GRIAROW JDARA OUTSUT OFF ON 1201008F OFF ON 1201008F ID 10 12 16 16 16 16 16 16 16 16 16 16 16 16 16	GH14267	JDE2U OUTFOT			OFF	on	1201003E					10			43		10-1,2		4345
CHIL-SOY JURIL CUTTUT DEF CN L2010-080 L20	GH1451A	JDA2D OUTPUT			OFF	OR	12010055								43	: :	LE-3 LO-1.2		4345
GHIA29V JDRZL OUTFUT OFF ON 1201008G 10 10 13 10-1,2 10-1,	GH1426V	JEAZA OUTFUT)FF	ON:	120194E) 							43		12-2 10-1.2	:	
GHL430V JUNIU OUTEUT OFF ON 1201008G 10 10 43 160-1.2 10.4 1E-2 4.345 GHL430V JUNIU OUTEUT OFF ON 1201008H 10 10 43 160-1.2 10.5 1E-2 4.345 GHL431V JUNIU OUTEUT OFF ON 1201008H 10 10 4.3 160-1.2 1	GH1429V	JDB2L OUTPUT			OFF	Oli	12010485									:	IS-3 IS-3		
GRILARY JURID OUTFUT OFF ON 1201002H JUN-1, 2 JUN-1, 3 JUN-1, 2 JUN-1, 3 JUN-1, 2 JUN-1, 3 JUN-1, 2 JUN-1, 3 JUN-1, 2 JUN-1, 3 JUN-1, 2 JUN-1, 3 JUN-1, 2 JUN-1, 3 JUN-1, 3 JUN-1, 2 JUN-1, 3 JUN-1, 3 JUN-1, 2 JUN-1, 3 JUN-1,																	10-5 1E-2		4345
GHL432V JUNIF CUITUT OFF OI 12010480 43 L0-1.2 L345 GHL433V JUNIL CUITUT OFF OI 12010481 43 L0-1.2 L345 GHL455V YAW ATT ERR DEG -12 +12 1102068 4 2 3 5 10 71 320 L0-1 LP-23 1123 L340 GHL457T ROLL ATT ERR DEG -12 +12 1102066 4 2 3 5 10 71 320 L0-1 GHL457T ROLL ATT ERR DEG -25 +25 1103034 10 3 5 5 10 71 320 L0-1, 5 L0-4, 5 L0-4, 5 L2-23 123 L340 GHL462V RGA PITCH RATE DEG/ -25 +25 1105034 10 3 5 5 10 71 320 L0-1, 2 L0-4, 5 L2-23 123 L340												10			43		10-4		4345
GHL433V JDEIL CUTFUT OFF ON 1201048N L3	G#1431V	Jusid Cutrut			055	ON	1201008H	l. ·				10			43		10-5	1	4345
GHIL-55V XAW ATT ERR DEG -12 +12 1102068 4 2 3 5 10 71 32C LO-1 LF-23 1123 4340 GHIL-56V PITCH ATT ERR DEG -12 +12 1101100 4 2 3 5 10 71 32C LO-1 LF-23 1113 4340 GHIL-57T ROLL ATT ERR DEG -12 +12 1102066 4 2 3 5 10 71 32C LO-1 LF-23 1123 4340 GHIL-57T ROLL ATT ERR DEG -12 +12 1102066 4 2 3 5 10 71 32C LO-1 LF-23 1123 4340 GHIL-57T ROLL ATT ERR DEG -12 +12 1102066 4 2 3 5 10 71 32C LO-1, 2 LO-1, 2 LO-1, 5 LF-21 1123 4340 GHIL-62V RGA PITCH RATE DEG/-25 +25 1102034 10 3 5 5 10 71 32C LO-1, 2 LO-1, 2 LO-1, 5 LF-21 1123 4340		1												- :	:				143115
GHI456V PITCH ATT ERR DEG -12 +12 1101100 4 2 3 5 10 71 320 L0-1 LP-23 1123 4340 GHI457T ROLL ATT ERR DEG -12 +12 1102066 4 2 3 5 10 71 320 L0-1 LP-23 1123 4340 GHI457T ROLL ATT ERR DEG/-25 +25 1103034 10 3 5 5 10 71 320 L0-1,2 L0-4,5 1123 4340 GHI462V RGA PITCH RATE DEG/-25 +25 1104034 10 3 5 5 10 71 320 L0-1,2 L0-4,5 1123 4340			one for a second		DEE	OH	12010481								43		IE-3		F3f2
GHILATT ERR DEG -12 +12 1102066 L 2 3 5 10 71 320 LO-1, 2 LO-1, 5 SEC 10-1, 5												1					LF-23	1123	4340
GRILGIV RCA YAW RATE DEG/-25 +25 1103034 10 3 5 5 10 71 320 10-1,2 10-4,5 1123 4340 GRILGOV RGA PITCH RATE DEG/-25 +25 1104034 10 3 5 5 10 71 320 10-1,2 10-4,5 1123 4340	GH1457**	ROLL ATT ERR						. :			: :					2.7	LP-23	1123	4340
GH1462V RGA PITCH RATE DEG/ -25 +25 1104-034 10 3 5 5 10 71 326 10-1,2 10-4,5 12-23 1123 4340	1 1	RCA YAW RATE		DEG,	-25	+25										320	LF-23 LO-1,2		
12-23 1223 1340	GH1462V		ing a second second	DEG,	-25		1104034	10	3	5	5			7 1		32C	10-1,2	1123	r3/10
				890														1123	1340

TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

	Measurement					Ţ - <u> </u>			- 				n/	СМ			
Number	Title	Unit	Appl ran		Loading number				V for rates	nat S/S		Summary TWX number	ana tabs	alog and ots	Strip chart record setup no	Primary MSK format no.	Thrift tab no.
			Low	High		1	14	5	10	30	_		STD	SP		<u> </u>	
GH3463V	RCA ROLL MATE	DEG/	-25	+25	1105034	10	3	5	5	10		71] 	350	10-1,2 10-4,5 12-23	1123	4340
GH1603X	NIDE DEED SEL		IIAR	MIDE	10470982					1			lili.	50	IO-1 IE-3	1137	4316
CH1621X	ACS SEL		POKS	ACS	10290950					1			иţ	50	10-1,2 12-3	1123	432);
GH1628X	ROLL FLSD/DIR		OUT	m	10330981			}		1		ļ. · ļ	Lit.	50	IE-3	1123	4315
GH1629X	Pitch Pisd/nin		our	331	1033098a				(-	1			երեր	50	LE-3	1123	4315
GE1630X	YAW PISD/DIR		OUT.	IN	1033098F								1,4,	50	1É-3 ,	1123	4315
GH1671X	AGS MODE AUTO		0 <u>₹∓</u> .	OII	1037098A].			44	50	E-3	1123	
GHI-942X	AGS MODE ATT HOLD		OFF	011	10370995					-	İ		intr	50	LE-3	1123	
CH1643X	PGUS MODE AUTO		OFF	On	10370982					1			44.	50	LE-3	1123	4425
CH161-1X	POIS MODE ATT HED		OFF.	OH	10370985					1			444	50	IE-3	1323	4425
GH1893X	X TRANS OVERRIDE		Off	OEF .	1047098E					1			1-1-	50	£5-3		1350
GH1896X	UNEAL CPLS	<u> </u>	NO	YES	10370980				- 1	1			1414	50	IE-3		4316
G13301T	asa Tem	o _F	20	200	1018005	1	.2	.2	1			71	23 A		LF-9		4310
GT3305X	AGS WARMUP		OFF	ON	10330983								15	50	1		4315
GI3306X	AGS STBY		OFF	OH	10350980			1					45	50			1315
GE0302X	FORMAT ID.		HER	LER		1	1	1	1						13-24		
CTO/100X	OSC FAIL DETCE		но	YES	1009098A								46	50	IE-4	1001	4006
GIO401V	CAL 85 PCT	VDC	0	5	1103099	1	ī	.1	1	10	1.	70	2 ¹ /A		LP-10 LP-24	1001	4006
GTO/105A	CAL 15 FCT	VDC	0	5	1103099	1	-1	.1	1	10		70	214A		LP-10 LP-24	1001	4006
GLO422V	OSC FAIL DETCT 2	VDC	D	5	1044101	1	.2	-2	1		į		24A		LP-10	1001	4006
CE-0453A	OSC FAIL DETCT 3	VDC		5	1023037	1	.2	.2	1				24A		E₽-10	1001	4006
cr4026x	CES AC FOWER FAIL		YES	120	1009098н	Z							46	51	ΙΕ-μ	T.,	4310
GE4027X	CES DC HWR FAIL		YES	190	10090980								46	51.	E-4		4310
ar≯os8x	ACS INT FAIL		YES	NO	1009098E							y i d	46	51	IE-4		£370
GIAO47X	EPS BATTERY CAUT		YES	NO	10090980		}	- 1 - 1			-		46	51	ŒΨ	1001	4009
GC#054X	C W EWR PAIL		YES	ю	10090985					-		70	46	51	18-4	1001	4006
	<u>iliya il fini yate wif</u>							ै							1, 1,	A* 5	

TABLE B-IV -- LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

	Measurement		·											0)1	T	Ī	
Number	Title	Unit.	Appi ran		Loading number				N for rates	mat S/S		Summary TWX number	an tab:	CM alog and ots	Strip chart record setup po	Primary MSK format no.	Thrift tab no.
			Low	High		1	4	5	10	32			STD	SP			ļ
GT4057K	MASTER ALARM ON		YFE	110	10093980					ı		73	46	51.	I.EU	1001	- t310
GL22751 (GL9401U)	RTG CASK SHLD TEMP/ECA NO. 1	o _F	-200	500	1047005	1	.1	-1	ı			70	24A		LP-10	1001	4002
33:5000X	IAMO GEAR DEPLOY		110	Yes	1.045098H	1	1.	1	1			Ċ.	46	50	I,E-4	1001	
G17521X	IR RANGE RAD		110	YES	100209SH	. :							46	51	EE-4		1430
@17557X	ER VEL EAD		ко	YES	1002095G	:							46	51.	TE-4		4475
0175631 (GL94020)	ir ant temp/eca no. 2	o _F	-20 0	200	1043005							71	24A		TP-10	1137	4480
G17621X	RR NO TRACK		TRK	HTRK	1002098	1	1	1.1	1				46	51.	1E-1	1137	4465
@17723£	RE ACT. TEMP	a _F	-200	+200	1009005	1	-1	1	l.			71	24A		LP-10	1137	4470
G20001P	APS HE 1 PRESS	PSIA	0	4000	1.040037	1	.z	.2	1		·	71	25A		TE-II	1153	4210
GP0902P	APS HE 2 PRESS	PSIA	0	4000	1025037	1	-2	.2	1	1		71	25A		LP-11	1153	r510
GP0018P	APS HE REG PRESS	PSIA.	٥	300	1019037	ı	5	.2	1			71	25A.	i	L7-11	1123	4210
GP0025P	APS HE REC PRESS	PSIA	0	300	1010069	1	.2	.2	1	1		71	25A	1	LP-11	1123	4210
GP0041P	P NO2 HE SUPP 1	PSIA	0	4000	1101068	1	.1	.1	ı			71	253		LP-12	1125	1510
G500;55	P NOZ ÉE SUPP 2	PSTA	0	4000	1103065	1.	ı	.1	1	3.6		71.	258		LP-12	1125	4210
GP0318X	ARS HE 1 CLSD		OFF (CLSD	1049098н					1			47	50	TE-F	1123	4210
GEO3SOX	APS HE 2 CLSD		ρPi	CLSD	10490980					ı	:		47	50	1E-4	1123	4210
GP07182	ar: fuel temp	o _E	20	120	1030069	1	.1	.1	1			71	25B		1F-10	1125	14230
G20908X	APS PUEL LOW		KORM	IOW	1029100		'						47	50	压斗	1123	4210
GP1818T	APS OX TEMP	P.	20	120	1034037	ı,	_	-4	1		- 1	71	25B		LP-12	1125	4230
GP1408X	APS OX LOW		HORM	LOW	1029100	. :							47	50	LE-4	1123	4210
GP1501P	APS FUEL PRESS	PSIA	o	250	1017037	1	1	1	1	1		71	25A	50	F5-77	ns	4210
G21503P	APS OX THESS	PSIA	0	250	1017005	1	1	1	ı	ı		71	25A	314	LP-11	1123	4210
GP2010P	THRUST CHAMSER THESS	PGIA	0	150	2201015	1	2	5	5	50		71	253	AEE	LP-12	1001	4510
GP2997U	APS DELTA POS A		CLD/ OPN	MID	1035098F								48	50	IE-li		4211
GP2998U	APS DELITA POS B		CLD/ OPI	KID	10350952								48	50	15-4		4211
GQ3015P	DES START TAIK P	PSIA		1750	1011069	1	.2	2 1		1		71	26A	İ	GP-13	1123	4200
	DPS HE REG PRESS	PSIA	0	300	1012005	i	.2		1	1		71	26A		LP-15	4.00	4200
																	4.

TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

Γ	 .			LOINA	K INO	DOCK IEER	111161			n 3L	iianati	414.1	- Continu			 	, 	::-
+	Number	Measurement Title	Unit	Appl ran		Loading number				V formates			Summary TWX number	ana tabs	CM alog and ots	Strip chart record setup no.	Primary MSK format no.	Thrift tab no.
L				Low	High		1	14	5	10	30			5TD	SP			
	03025P	DES HE REG PRESS	PSLS	a	300	1011069	1	.a	.e	1	1		71.	26A		LP-13	1123	4200
	CC3435P	DES HE FRESS	PSZ	0	2000	1002069	ı	.2	.2	1	1		71	264		LP-13	1123	4500
	G33603Q	DES FUEL 1 QTY	PCI	0	97	10280 05	1 :	1	1	2	1.		÷	268.	34-A	LF-14	1123.	4200
1	cs3€044	DIS RIET 5 CLA	PCT	0	97	1,527037	l ı	L	1	1	1			ZÚE	34-A	LF-14	1123	4200
-]	c639715	DPS FUEL PRESS	esta	0	300	1005069	1	1	1	1	ı		7L	268	34-A	LF-14	1123	4201
1	F13716T	DES FUEL 1 TEMP	o _F	20	120	1002005	1	.1	.r	1			71	26A		IP-13	1125	1230
1	CQ3719T	DPS FUEL 2 TOMP	op	20	120.	1031037	1	.1	.1	1		j!	71	264		FE-13	1125	1530
	3Q4103Q	DRS OX 1 QTY	PCT	0	97	1043037	1	1	1	1				263 ·	34-A	LP-14	1123	4230
	70,410 kg	DEZ OX 5 CLA	PCT	a	97	1035037	1	1	1	l.	1			2úB	34-A	LP-14	1123	4800
1	RLIIIP.	OPE OX PRESS	PSIA	0		1003069	1	1	1	ı	Ţ		71.	263	34 - A	LP-Li+	1123	4500
1	201-01-02 201-01-02	DPS OX TEMP	o _F	20	120	1001101	1.	.1	-1	1			71.	26A		LP-13	1125	4230
1	XV-219T XV-4-55X	DPS DX 2 TEMP	o [£]	20	120	1009101	1	7.	-1 	1		.	η. 	27A		LP-13	1125	.4235
1.	X6510F	DRS TOP	PSIA	DORM	TON	1038098G 2201014	1	2					n.	47	50 -		1125	4830
	7,6806#	VAR IFUT ACT RES	PCI		100	2201014	1	۲	5	5	50		71.	26E	34-A 34-A	LP-14	1123	4200
	IR10S5Q	ECS PROP A CITY	PCT	٥		101509	1	-2	2	,	50		71.	27A	34 - A	LP-14	1123	4800 4220
	P10950	RCS PROP B QPY	FCT	٥		1032069	1	.2	.2	1			71	27A		LP-15	1123	4221
1	R1101P	RCS A HE PRESS	PSIA			1033037		.2	.2		1	1	71	27A		TL-T	1159	4221
	#1102F	ACS B HE FRESS	esia	o		1029369	12.	2	. z	ī	ī		71	27A		LP-15	1123	4221
	≅150F5	RCS A REG FRESS	PSIA.	0	350	1030005	1	.2	.2	1			71	27A		1.0-1.	1123	4220
	R1202P	ACS B REG ERESS	-SIA	0	350	1037005	1	.2	-2	ī			71	.27A		<u> </u> - 15	1123	422 1
	#2121T	RCS A FUEL TEMP	0_	20	ıξο	1018037	1	.1		1	1		71	27A		LP-15	1125	4230
1	#5122T	has b fuel temp	o,	23	120	1020037	1	.1	.1	1			71	27A		LF-1:	1125	4230
	32201P	A FUEL HELD THING	PSIA	D,	350	1004069	1	.2	-2	1	1		71.	ê.78		10-4 17-16	1123	422 0
	R2202P	s fiel 1710 mess	PSIA	n	350	1004101	1	.2	a	1	1		71.	273		10-5	1123	4221
													; <u>:</u>	\$4"		LP-16		
	R3201P	A OX NEID FREES	PSIA	ם	350	1306069	1	.2	-2	1	1		71. 7	27E		L=-16 10	1153	1223
ا	23202P	B CX NYLD ERESS	PSIA	٥	3 50	roman .	1	.2	.2		1		71	273		10-5 LP-1- LE-1-	1123	1221



TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

ſ			Measurement		. ::,			Т						Y - Conti	<u> </u>		T		· · · · · · · · · · · · · · · · · · ·
	Number		Title	Unit	App ran		Loading number				N for rates			Summary TWX number	an tab	CM alog s and lots	Strip chart record setup no.	Primary MSK format no.	Thrift tab no.
L			<u> </u>		Law	High		L		5	10	30		l	STD	SP	1.0.	<u>.</u>	ļ
	сн5031X	ECS TOP E4U			OFF '	CH	2501006A	SP	CIAL	FR	EGS	irig			43		10-5 12-5		4345
	G 85032X	HOS TOP ALD	: '		OFF	OIT	E201006B	SP	CIAL	PR	oreas.	10			녆		10-4 1E-5		4315
	2850 33 X [™]	FCS TCP B4F			ÖEF	ឲារ	5507209C	SF	HAL	Ħ.	X 255	23			43		LO-5 LE-5		143115
1	ER5034X	RCS TOP ALE			OFF	ON .	2201006D	SE	CTAL	m	ESS:	us			∔ 3		10-4 15-5		L3 65
	IR5035X	ECS TOP A3U			DFF	OII	220 10 065	SP	JAL	1 780	PESS:	na			43		10-1 12-5		4345
	æ5036X	RCS TOP BED			OFF	0.1	52010065	SF	EIAL	Fic	ESS	n3			43		10-5 1E-5		4345
	R5037X	ECS TOP B3A			OFF.	0;1	22:1100 6 G	SE	PIAL	PR:	ESS	NG)· ·	43		IE-5 10-5	·	4345
1	R503&x	RCS TCP A3R			3FF	ая	2201006H	SFI	CTAL	PR C	ėss.	113			43		16-5 15-5		4345
	R5337K	RCS TOP BEU	anta ann an tagair Tagairtí		OFF	0:1	2201097A	SFE	CIAL	m	CESS:	ii.G			43		10-5 15-5		<u>-3</u> -5
	25040X	RCS TCP A2D			35.5	OH .	22010075	SH	CIAL	FFC	CESS:	KG			45		10-4 1E-5		(1945
	25041X	ECS TOP AZA			OFF	oni	220 1007C	SPE	CIAI	PRO	eess.	113			41		10-4 15-5		+3+5
	R5042X	RCS TCP H2L	ngan di dinasari Majarah jerupak		OFF	on	35910000	SFE	CIAL	ĦC :	ess:	ng			43	. :	10-5 12-5		न ्द ीरह
١	±5243X	FCS TCP AID			OFF	OH	2201007E	SFE	CZĄĮ	RO	CESS	на		a Description	149		3 th		H3F2
	25044X	RCS TCP HID			OFF	OH	22010077	SFI	CIAL	ERO	CESS	11.3			43		10-5 1E-5	r s	4345
	#5045X	RCS TCP ALF			OFF	Oli	22010070				CESS	í	::		1-3		10-1 12-5		4345
	R5046X	RCS TCP BLL			CFF	OII	220 1 007H	SFI	CIAI	FR:	CESS	ng		- L.S.	43		10-5 陸-5	Å.	F3#2
ı	#6001T #6002T	QUAD & TEMP		o _F	-60 -60		1003005 1010005	1	.1	.1				71 71	275 278		12-10 12-16	1123	4230 4230
G	R60031	QUAD S TEMP		o _F	-€ 0		1022 3 05	1	.1	.1	۱ ۱			71.	275		LP-Ló	1123	4290
1	R6004T	QUAD 1 TEMP		o _F			1023335	. 1.	.1	.1	I			71	275		LP-16	na	4235
	39609U R9610U	ECS MAIN A CLE			of:		1013098E					ı			4g 4g	51 51	12-5 12-:	1123 1123	422 0 4221
L														11 <u>1</u> 1 44					

TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

Γ		TABLE B-I				1	T -	-					1		·		·	,
No.	umber	Measurement Title	Unit	Appi ran		Loading number				l fon rates	naL S/S		Summary TWX number	an tab	CM alog s and lots	Strip chart record setup	Primary MSK format no.	Theift tab
	:	<u> </u>		Low	High		1	L,	5	10	30		1	STD	SP	no.		
GR:)613t	A/B XFEED OPEN		CLSD	OFE IL	10130988		1	Ī		1			49	51	IE-5	1125	4221
GR9	163LU	fuel incht a opn		CLSD	OF5H	10130980					l.	ļ		4.9	51	IE-5	1123	4220
GR 9	6320	FILL INVINT BOM	ļ	CLSD	DPEN /	10130750		-			۱.			49	51	IS-5	1123	4221
GR9	£111	OKID INTERT A OFM	:	CISD	OPEH	1013098#					1			49	51	IE-5	1153	425.)
CR9	642U	Oxid intent a offi		CLȘD	OPER	10130955				1	ı			L 9	51	IE-5	1123	4221
GR9	661X	4A DISABLED		neeo	CLSD	1048095#								49	51	1E-5	1125	4220
GR.9	662);	48 DISABLED		0FE11	CLSD	10 ¹ .8098G		,						49	51	IE-5	1125	4221
	663X	3A DISABLED		OHE31	CLSD	10460985						. 1		ήð	51	LE-5	1125	4220
i-I	664X	3B DISARIED		OFFI:	CLSD	10480988								10	5 <u>T</u>	IE-5	1125	4221
11	665X 666X	2A DISABLED 2B DISABLED		OPEN OPEN	CLSD	1046098D 1048098C	1		.1	1				49 49	51 51	12-5 15-6	1125	4220 4221
GR9	667X	1A DIBABLED		DEEN!	ciso	101 0098B								49	51	12-6	1125	4220
GR9	66 <u>8</u> c	1B disabled		oeen -	ciso	101:8099A	1	.1	.1	1	.			49	51	<u>115</u> -6	1225 ⁻¹	4221
CIO,	441X	DUA STATUS				5101097	٠				50			1.9	, .	IE-6		-
CIO	454T	TEUP BY ANY ELEC ASSY	DEG	-200	+200	1028101	1	•1	1	1	1		· .	28A		LP-17	1468	5002
GTO	625V	VHF RECVE B AGC	DEM	-40	-106	1024059	ı	-1	-1	1	1			284		LP-17	1468	
GIO	992B	S-END ST PH ERROR	KHZ	-186	+170	1048037	1	1	1	1	1		70	2ĉA	_	LP-17	1469	5002
GTO	993E .	S-END XMCR FAR	15%	-355	3143	1050101	1	.5	.2	1	1		70	2čA		LF-17	1468	5002
Gro	99LV	S-MM ROVE SIG	DEN	-130	- 148	1040005	1	1	1	Ţ	1		70	28A		LP-17	1468 .	5002
l	050X	ABORT CLD		no	YES	1014095#	4				1			4.y.	51	E-6	1001	4331
	201X	ed sys a pel XFR ed sys e pel XFR		no .	XES	1014098c								hoj	51	EE-6	1001	4006
	ſ			NO OPEN	YES CESD	10140985								La La	51.	IE-6	1001	4006 4006
		SYS A FED REL CLSD				101/10930								49	51 51	E-6	1001	4006
RIC	001T	LCRU HADIATOR TEMP.	o _r	o	160	DOTE 1	ł	.5	,		- }			30A	- 1	XP.12	- 1	5103
RTC	993T	LCRU SUBSYSTEM VOLTAGE	o _F	25	33	NOTE 1		.5	1	<u>.</u>		1	A, i	30A	- 1	XP-12	1468	5073
ora.	1214	EVCS L CAL O PCT	VDC	0	5	NOTE 3	- 1	1	1	- 4	1			1			1310	4120
តាន	1254	EVCS 1 CAL 100 PCT	V⊅Ç.	9	. 5	NOTE 3				1-	-	.		29A			1310	4120
ರಾನೆ:	nop	FLSS NO. 1 FEED H20	PSIA	٥	5	HOTE 3	1	1	1	1)			1	J	LF-23	1310	4120
arei	12½J	EK7 NO 1	VDC	0	5	HOTE 3										12-25		
GT8 1	1400	FLSS BATTERY CURRENT NO. 1	AMP	o	10	NOTE 3		1	ı	1				29A		LP-23	1310	4120
L		r <u>Chagai</u> n a <u>c</u> htaig cail a' bai							.									
	77.2	lovembre 1072	-	لنب			,				- -		 -					



TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Continued

ı			<u> </u>			·							i - contini					 _
	Number	Measurement Title	Unit	Appı		Loading number					nat S/S		Summary TWX number	ana tahs	CM alog and ots	Strip chart record setup no,	Primary MSK format	Thrift tab no.
į				Low	High		1	ļ	5	12	32		<u> </u>	STD	SP			
i	378141V	FLSS NO. 1 PATTERY	VZC	12	23	HOTE 3		.2	5	1	Π			29A		LP 25	1310	412)
	ST8154T	LOG HE HIET TEMP, NO 1	°F	49	10	HOLE 3		.5	1	l.		1		298		LP-25.	1310	4120
	or8163P	PG 02 Kg. I	PSIA	2.5	5.	HOTE 3		1	1	1	-		ļ	298		LP-25	1310	4120
	GI8170T	FISS 1 SUB 02 OUT	o _F	40	93	NOIE 3		.2	5	1				29B		LP-25	1310	1.120
	GT8175P	FISS 1 GOZ FARTIAL PRESSURE	1096	o	30	HOTE 3		.1	1	1				89C		LP-25	1310	7120 -
	GT8182P	PISS 02 SUPPLY NO. 1	PSIA	0	.500	поте з		.2	5	1				29A		LP-23	1310	4150
	OT 8196T	MSS 1 H20 DELITA T	o _p	0	15	NOTE 3).	.5	1	1				29B		LP-23	1310	4120
	C18501A	EVCS 2 CAL O PCT	VDC	0	5	H ENCH		.1	.1	1							1310	4121
	01830SA	EVCS 2 CAL 100 PCI	VDC	0	5	none 4		.1	.1	1							1310	4121
	CT82103	PISS 1:0, 2 FEED H20	PSIA	0.	>	NOTE 4		-5	1	1				29A		rs sa	1310	r 151
	GT8224J	EKG NO. 2	VDC .	0	5.	KOTE 6										LP-25		
1	018240C	FISS BATTERY CURRENT NO. 2	AMP	0	10	HOTE 4		1	1	ı				29A		LF-23	1310	4121
	GE8241V	PISS NG. 2 PATTERY	7DC .	12	20	note 4		.2	-5	1			i.	29A		IP-26	1310	4121
	OT8254T	LCG H20 INLET TEMP. NO. 2	o _F	40	9/1	NOTE 4	-	-5	1.	1				293		LF-26	1310	1121
	GT8268P	FGA 02 NO. 2	PSIA	2.5	5.0	KOTE 4		1	.1	1		:		29B	:	LP-26	1310	4121
	GT82707	FISS 2 SUE 02 OUT	0,	40	90	NOTE 4		.2	-5	1				29B		LF-26	1310	1. <u>121</u>
1	GE8275P	FLSS 2 CO2 PARTIAL FRESSURE	GEIG	D	30	NOTE 4		1	.1	.				29C		LP-27	1310	4 <u>121</u>
	OT8282P	PLSS 02 SUPPLY NO. 2	PSTA	0	1500	HETE!		.e	-5	1				: 29A		LP-26	1310	4121
	CT8296T	FLSS 2 H20 DELTA T	0,	0	15	HOTE 4	: 1	-5	1	1				293		EF-26	1310	4 <u>121</u>
	GT99997	EKG NO. 1/NO. 2	ADC	0	5	NOTE 2										LF-27		
																1 12		
	HUTE 1:	RTSOOLT and RTSOOLT are time shared on IRIG channel 13 VOO with RTSOOLT on 20 sec. and RTSOOLT on 10 sec.																
1	101E S4	This measurement is carried on IRIC channel 13 VCO when the LCRU is not operating.																
	HOTE 3:	PISS 1 telemetry are sampled by a 30x 11 commutator whose output												-				
		modulates an IHIG channel 12 VCO. (EAM/FM)																
	NOTE 4:	30x1 commutator whose output modulates an IRIG channel 11 VCO.				l Parkiri								.				
		(EM/FM)																3.4 Fu
L			<u>_</u>		L			_1	丄	丄								

TABLE B-IV. - LUNAR MODULE TELEMETRY DATA SUMMARY - Concluded

	Measurement					T			_		 -	1	_	CM.	Ī		
Number	Title	Unit		rax . ige	Loading number				N for rates		;	Summary TWX number	an tab	CM alog s and lots	Strip chart record setup	Primary MSK format no.	Thrift tab no.
			Low	High	2	<u> </u>	T	T	T				STD	SP	no.		
nove 5:	Electrocardiogram #1 in FM/FM modulated on IRIG channel 10.																
nore 6:	Electrocardiogram #2 is FM/FM codulated on IRIG channel 9.		:														
																	: · [.
											-						i
					· .												
											:				}		
																	, .
									·								:"
	Alime Turkenin i Sa Dinasaran biranga														1		,
																	e in in the second
												461 III 461 II					
					i												
	ter i di giunti di silanda di ta Silanda Ngara et 1821 di Sa	ļ _.			a nasara												
							l I		- 1								Vije is
	yddiol y diwyddiol y diwyddiol 12 gyddiol y diwyddiol y diwyddiol																
					. 4							a 1. X					



					MODULE	1				-	-	-	-		1		
Number	Measurement Title	Unit	Appi ran		Loading number				N fon rates	mat s 5/S	; ;	Summary TWX number	ana tabs	CM alog and ots	Strip chart record setup	Primary MSK format no	Thrift tab no.
			Low	High		1	5.	ن	. 5	9	30	_	STD	SP	no.		
CAId2OT	TEMP CREW HS ASL SUR LCC IA	o _F	-860	+!:30	1022084	1	·ì		.1		Γ	3,5	LA		CP-1	404	3600
CAlball	TEMP CREW HS ABL SUR LCC 4A	o _F	-260	+63a ·	1024052	1	.1		ı	.1		3, 5	1A		CP-L	r9r.	3630
CAI022I	TEXT CREW HS ABL BUR LOC 7A	F	-265	÷∺30	1025084	1	+1	 	1.1	-1		3,5	LA .		CP-1	404	36aa
CALU23T	TEMP CHET HS ABL SUR LOC 11A	<u>ئ</u>	-360	#830 -	1097052	1	-1		.1	-1		3,5	1A		CF-1	434.	3€∩0
BC33302	QUANTITY HE TANK I	PC 7	0	100	1547116	1	.1		.1	5	1		30		C₽-6	613	3253 :
BC0031Q	QUANTITY H2 TANK 2	PCT	. o	100	1049116	1	.1		1.1	-5	1		30		₫ F =6	513	3253
DSE0032Q	QUALITY OF TALK 1	PCT	ō	100	1049116	1	.1		1.1	•5	1	14	3¢		CP-6	613	3252
8C30333	QUANTITY 02 TAIK 2	PCT	. 0.	100	1014,116	1	-1		1.1	•5	1	1.	3 C	-	CP-6	á13 .	3252
SC0037P	FRESS 02 TAUK 1	AIEG	50	1 050	1050116	1	•2		.5	-5	1		38		G7-5	é 1 3	3252
E000382	ERESS CO TAIK 2	PSLA	50	1050	1222116	ı.	.2		.5	1	1	- L	38		CP-5	413	3252
\$00039P	FRESS H2 PAGE 1	PSIA	o	350	1013176	1.	.2		.5	1	1	14.	- 39		CT-5	613	3253
SC0040P	PRESS H2 TALK 2	PSIA	15	350	1013116	1	.2		-5:	1	I	1.	39		CI-5	613 .	3353
SC004IT	TEMP 02 TANK I	o _F	-325	+50	1018116	1	٦.	ļ. ,		-5	1	Щ.	30		CF-7	613	3252
SC30427	म्ह्या १८ महास इ	o <u>F</u>	-325	+50	101911c	1	.1		.1	.5	1	1,	3⊅		CP-7	613	3253
EC0043T	TEMP H2 TALK 1	o _z	-425	-20 0	1020116	1	-1		.1	5	1		3E		CF-8	ćI3	3252
SCOCHIT	TEMP H2 TANK-2	o _F	- 25	-20p	1021116	1	-1	. '	ı	-5	I	1 4 T	Œ		CP-8	613	3352
SC00502	quantity he tank 3	PCT	a	100	1001116	1	.2		•1,	. •1	1	4 9	30		СР-6	613	3253
SC0051Q	QUARTITY 02 TANK 3	PCT	0	100	1105041	1	.1		.1	•1	15	4	37		GP-6	613	3252
8000522	THESS H2 TAIK 3	PSIA	b	350	1102043	1	.2	٠.	.2	.2	IG		3B		CP-5	613	3853
SCOOSSP	PRESS 02 TAUK 3	PSIA	.50	1050	1105012	ı	.2		.2	.2	10	1	35		C2-5	613	3253
SCOUPLT	TEMP HE TANK, 3	o.F	±25	-200	1039116	ı,	-1		.1	-1	1	L 12	蓝点		CP-S	613	3253 ERRE
SC0055T	TEMP OR TALE 3	o ^z	-325	+85	1028116	1	.1		.1	-1	.1	5	3⊅		CP-7	613	32:2
SC3069F	EMESS OF TAIK 2 AND 3 MARIE	ISIA	50	1050	1107044	i	.2		.2	.2	13	4	32		CF-5	613	3008
SCOUTOI	TEMP 02 TANK I HEATERS	ء و	_300	+600	1036116	ı	.1		-1	.1	2	±. ± .	₹0		CP-7	613	3052
ಪ ರು ು717	JEHO 02 THA S HEATERS	o-	-300	+600	1037116	1	1		-1	-1	- 1	4	30		CP-7	613	325a
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TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued 51.2 KB DATA SYSTEM

+		Measurement					1						1	1		1	1		- 1
	Number	Title	Unit	Appı ran		Loading number				N form			Summary TWX number	an: tabs	CM alog and ots	Strip chart record setup	Primary MSK format no.	Thrift tab	
				Low	High		1	5	6	ű	9	30	1	5TD	SP	no.			1
2	3 0 0072]	TEMP 02 TALK 3 HEATERS	o _F	-300	+500	1045116	1	.1		.1	÷ī		ĵ.	3D		cP-7	613	3252	
	0001751	TEMP STATIC HIVERIER 1	o- /	32	248	1029384	1	.1		-1	-5	1	3	2A		CP-2	51 8	3005	
	C0176T	TEMP SZALTO ILVERTER 2	٥p	32	248	1050052	1	.1		.1	-5	1	3	ZA.		CF-S	518	3005	
ď	001771	TEMP STATIC INVENTER 3	C.	32	248	1030084	1	.1		.1	-5	1	3	2A		CP-2	518	3005	
6	C0200V	AC VOLTATE MATH BUS 1 PHASE A	ÿrl's	0	150	1105011	10	.2	10	.2	10	10	3	28		CP-3	518	3000	
į	:0203y	ac Voltage Math Bus 2 Fhase A	VELS	0	150	1102074	10	.2		.2	1	10	3	SE		CP-3	518	3000	
C	02020SV	DC VOLTAGE MAIN BUS A	VDC	0	45	1102075	10	.2		.2	1	10	3,20,21	28		CF-3	518	3000	
C	:C0207V	EC VOLTAGE MATH BUS H	VDC	o	45	1102076	10	.2		·s	1	10	3,20,21	23		CP-3	518	3000	
C	C0510A	DC VOLTAGE BATTERY BUS A	VDC	0	45	1103073	10	.2		.2	1	10	3	28		CP-3	518	3000	
C	COZIIV	DC VOLTAGE BATTERY BUS B	VDC	o	45	1103076	10	.2		.2	1	10	3	28		CP-3	518	3000	
	:C0215C	DC CHREST BATT CHARGER OUT	AMP	0	5	1103009	5	3.		.e	1	10	3	2A		CE-5	518	3005	
	C0222C	DC CURRENT PATTERY A	A!SP	C	100	1103010	10	.2		.2	1	10	3	2A.		CF-2	518	3000	
	002230	DC CURRENT BATTERY B	WID	0	100	1104009	10	.2		.2	1	10	3	5V		CP-2	518	3000	
	C0230V	DC CURRENT BATTERY C DC VOLTAGE, SM	AMP VDC	0	100 40	1104010	5	.2		.2	1	10	3	2A		CP-2	518	3000	
	C0535A	DC VOLTAGE BATTERY	VDC	0	45	1103011	10	.2		.2	.2	10	3	25		CP-3	518 518	3000	
	C2066P	RELAY EUS OZ PRESSURE FC 1	PSIA		75	1102108	10	.2		.2	1		3			CF-3		3005	
	C2067P	OZ PRESSURE FC 2	FSIA			1102113					1	10	3	3.		CF-9	518		
	C2068P	OZ PRESSURE FC 3			75		1	.2		.2	1	10	3	35		CF-9	518	3015	
	verion.	DE PRESSURE PU 3 REGULATED	PSIA.	0	75	1105151	1	-2		·2	1	10	3	31		CP-9	518	3015	
s	C2069P	H2 PRESSURE FC 1 REGULATED	PSIA	0	75	1105153	1	.2		.2	1	10	3	35"		CP-9	518	3015	
S	C20702	H2 FRESSURE FC 2 REGULATED	PSIA	٥	75	1102123	1	.2		.a	1	10	3	3F		CP-9	518	3015	



TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued

	<u> </u>		<u></u>			51. 2KB D	ATA	SYS	TEA	1					<u> </u>	<u>:</u>	-	
	Number	Measurement Title	Unit	App ran		Loading number				N fom rates			Summary TWX number	ana tabs	CM slog and ots	Strip chart record setup	Primary MSK format	Thrift tab no.
				Low	High		1	5	6] e	7	30	İ	STO	SP	no.	""-	
	S02071P	H2 FRESSURE FC 3 REGULATED	PSL	O	75	1102124	1	.2		.2	1	10	3	3F		CP-9	518	3015
	SC2081T	TEMP FC 1 COID EXHAUST	0 p	145	250	1027116	1	.1		1.1	.5	1	3	311	ļ. · · ·	CP-11	518	3010
	EC2082T	TEMP FC 2 COND	οŗ	145	250	1041116	1	.1			.5	1	3	3#		CP-11	518	3010
	SC2083T	TEMP FC 3 COMD EXHAUST	O.	145	250	1023116	1	1.1	ļ	.1	.5	1	3	3H		CP-11	51.8	3010
	SC2084T	TEMP FC 1 SKIN	o _F	80	550	1024116	1	.1		.1	5	1.	3	3#		CP-11	518	3010
. :	SC2085T	TEMP FC 2 SKIN	o _F	80 _. : - 60	550 550	1025116	1	.1		.1	.5 .5	1	3 3	3H		CP-11	518 515	3010
	SC2087T	TEMP FC 1 RADIATOR	o _F	-50	+300	1042116	1	.1). s.	.1	.5	1	3	31	٠.	CF-12	51B	3010
	508083E	TEMP FC 2 RADIATOR	o _F	-50	+300	1043116	1	.1		.1	.5	1	3	31		CP-12	518	3010
	SC20897	OUTLET TEMP FC 3 PADIATOR	o _F	-50	÷300	1044116	1	.1		.1	.5	1	3	31		CP-12	518	3010
	SC2090T	OUTLET EAD THLET TEMP FC 1	o _F	-50	+300	1044052	1	.1	٠.	.1	-5	1	3	E		C7-12	5 1.8	3010
	SC2091T	RAD INLET TEMP FC 2	0-	-50	+300	1044084	1	.1		.1	.5	1	3	31	1	CF-12	518	3010
	SC2092T	RAD INLET TEMP FC 3	٥Ē	-50	+300	1023052	1	.1		.1	-5	1	3	31		CP-12	518	3010
	sC2113C	DC CURRENT FC 1	AMP	o .	+100	1103012	10	1		-5	1	10	3,4	ЗА		CP-14	518	3910
	SC2114C	DC CUPRENT PC 2/SM PATTERY	AMP	0	100	1103043	10	1		-5	1	10	3,4	3A.		CP-4	51.8	3000
	502115C	TC CURRENT FC 3 OUTPUT	AI Œ	ð	100	1103044	10	1		-5	1	10	3,4	ЗА		CP-4	518	3000
	SC2135E	FLOW RATE H2 FC 1	L3/10	ó	.2	1103017	1	.2		.2	1	10	3.4	30		CF-10	518	3015
	SC214OR	FLOW RATE H2 FC 2	13/13		.2	1103025	1	2		.2	1	10	3,4	30		CP-10	5 <u>18</u>	3015
	SC214IR SC2142R	FION RATE 02 FC 1	LB/HI		1.6	1103026	1	.2		.2	1	10	3,4 3,4	3G 3G		CP-10	518 518	3015 3015
	SC2143R	FION HATE OF EG. 5	1.3/11		1.6	1103028	1	.2		.2	1	10	3,4	3G		CP-10	518	3015
	sc2144R	FION RATE 02 FG 3	CB/H2	0	1.6	1103041	1	.2		.2	1	10	3,4	3G		CP-10	518	3015
	SC2160X	TH FACTOR WATER COID FC 1		INÚR!	нтсн	11050666							/3 /	1	10	CE-1	516	3010
	EC5161X	PH FACTOR WATER COLD FO E		DOR!	HIGH	11050668						10	3	1	10	CE-1	518	3010

TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued 51.2 KB DATA SYSTEM

		·	<u> </u>		51.2 KB D	AIA	21:	>1FV	1			,	-		, -		
Number	Measurement Title	Unit	App ran		Loading number				l for rates	nat 5/5		Summary TWX number	ant tabs	CM alog s and lots	Strip cliart record setup	Primary MSK format	Thrift tab
			Low	High		1	5	6	В	1 2	30		STD	SP	110+		
SC2162X	FH FACTOR WATER COID FC 3		170HM	нтен	11:05066d						10	3	1	10	CE-1	518	3010
CC2962C	CSM TO LEM CURRENT MUNITOR	AMP	0.	10	1102042	10	.1		.1	1	10	3	ЗА		CP-4	518	3005
epooo5v	DC VOLTAGE PYRO EUS A	Vic	a	40	1101028	. 5.	.5		.5	1	10	3		11A	CP-31	518	3005
CD0006V	EG AGENYCE BANG	VINC	o.	140	1101017	j	.5		5	1	10	3		11A	CP-31	518	2005
CD0053X	CM-SM RELAY CLOSE A			SEP	1104067A						10		a	10	ÇE-1		3635
CDOC5/1X	CH-SM SEP RELAY CH-SE B			SEP	1104068A						10		2	10	CE-1		3200
CD0123X	SLA SSPARATION RELAY A			SEP	11040578						10		2	10	CE 1	:	3635
CDO124X	SIA SEPARATION RELAY B			SEP	11040680						10		2	10	CE-1		3200
CD130X	HAID CONTROLLER			ABORT	11037650						10		2	10	CE-1		3635
CD0137X	HAID COMMOLISE DISUL B			ABORT	11030658					" -	10		2	19	CS-1		3635 [/]
свотзях	EDS AFORT LOGICE INFUT NO 1		VOTE, OFF	ARM.	11030€6A		 u // }				10	in Maria Maria	2	10	CE-I		3300
CDO133X	EDS ABORT LOGIC LIFTUT 10 2		VOTE,	ARM	1203066b		-			A	10		2	10	CE-I		3250
спотзих	EDS ABORT LOCIC LIMIT IN 3		VOTE, OFF	MEA	1103966E				}	ni, 1	10		5	10	CE-1		3200
спотээх	EDS ASORT LOGIC OUTPUT A			ABORT	11030650						10	₩.	2	10	CE-1	. }	3200
CD0136x	EDS ABORT LOSIC OUTPUT B			ABORT.	11030651						10		2	10	ζ£−1		3200
CD0170X	ECS ACTIVATE SIG A			enabl	1						10		2	16	CE-1		3635
CD0173X	RCS ACTIVATE SIG E			enabic	3104065C		- 2				ıc		2	10	CE-1		3635
CD0173X	CM ECS PRESS SIG A			PRESS	12040670	1	1		1	1	10		2	21	CE-1		3635
CD0174X	CIT FCS PRESS STG E	1		eress	1104068E	1	1			1	10	- 11 - 15 3	2	10	CE-1		3635
CDOSCOO	DC VOLTAGE LOGIC BUS A	VDC	a	40	1101027	5	.5		.5	1	10	3.	2	1IA	d9-27	518	8305
CDOZGIA -	DC VOLTAGE LOSIC	VDC	3	40	1101025	5	.5		.5	1	10	3		11A	CP-27	518	3205
cD0230X	END HS JETTISON A			JEPT	1104097/	1	1		1	1	10		2	10	Œ-1		3200
		4	1	لتا	- 11		- 1	بلب	_1.	-4	بلبي		المنيا				

TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued 51.2 KB DATA SYSTEM

Ē						51.2 KB [MIH	31.	3 1 5	141			T	·			<u> </u>	
	Number	Mea <u>surement</u> Title	Unit	App ran		Loading number				N for		; .	Summary TWX number	an tab	CM alog s and lots	Strip chart record setup	Primary MSK format	Tirrift tab
1				Low	High		1	5	6	8	9	30	1	STD	SP	no.		
	CD0231X	FID HS JETTISON B			JETE	11340995						10		2	10	CE-1		3200
	CD0412X	SIM PYRO BUS A ARM			APM	1103098A						10		: 2	10	CE-4		3200
	CD0413X	SIM PYRO BUS & ARM			ARU	1103098a			-			10		2	10	ÇE-4		3200
ľ	10115/X	CSM-IEM LOCK BING SEP RELAY A			SEF	1103067F						10	}	7	10	CE-4		3200
,	001155X	CSM-LEM LOCK RING SEP RELAY B			SEP	11030675				ľ		10		7	10	CE-4		3200
,	E000IX	DROGUE DEPLOY RELAY CLOSE A			DE- PLOY	1105067A						10		3	10	CE-1		3200
,	E0002X	DROQUE DEPLOY RELAY CLOSE B	:		DE- FLOY	1105968F						10		3	10	CE-1		3200
,	E0003X	MAIN CHUTE DEFL DRG REL REY A			DE-	1105067#						20		3	10	CE-1		3200
	ж000µX	MAIN CHUTE DRPL DRG REL REV B	l m		DE-	1105068c	ļ					10		3	10	CE-1	1	3200 .
	350351X	MAIN CHUTE DISCONDECT RELAY A			PLOY	1105067E						10		3	10	ÇE-1	1	3200
	E0322X	MAIN CHUIE DISCONNECT RELAY B			orsc	1105068H						10		3	10	CE-1		3200
(:F0001P	PRESSURE CABIN	PSIA	a	17	1002116	1	.2		.2	1	10	ħ,	иБ		CF-14	613	3250
,	170002T	TEMP CARDI	C _F	40.	125	1043084	1	.I		.1	.5	1	4,20,21,2	PΒ		CP-10	613	3250
•	:F0003P	PRESS OF SUIT TO CABIN DIFF	H20	-5	+5	1102009	1	•1		.1	1		_ 4	42	1	cr-17	613	3250
ŀ	F0005P	FRESS CO2 FARITAL	NOT HE	0	+30	1001052	1	.1	. :	.1	.5	1	4	1:3		CP-1 ⁴	613	3250
l	150006F	HESS SURGE TANK TEMP SUIT SUPPLIE	PSIA OF	50 20	1050	1101012	1	2		.2	1	10	i,	4B		CF-14	613	3250
		MARIT			95	1015116	1	.1	T. T. 	.1	5	ı	4	4B		C2-14	613	3250
ç	:F0009Q	QUANTITY HASTE WATER TALK	PCT	0	100	1003116	1	.1		•1	-5	1	4	48	- "	CP-14	613	3253
c	E00105	QUAN FOTABLE H20 TANK	PCT	a	100	1027116	1	.1		.1	-5	1	<u>.</u>	4B) 	CP-1 ⁴	£1.3	3253
C	E0015P	ERESS SUIT DEMAND NEG SENSE	PSIA		17	1101003	1	.e		.2	1	10	ı.	4E		CF-17	613	3250
c	E30125	FRESS SUIT CON- FRESSOR DIFF	2370	o	.9	1101010	1	.2		.2	1	10	4	ā		CP-17	613	3250
c	F-0016F	FRESS GLYCOL PROP OUTLET	esic	0	60	1101011	1	.2		.2	1	10	i,	ւր		CP-16	613	3251
c	20071JT	TEMP GENCOL EVAP OVILET STEAM	o _E	20	95	2045052	1	.1		.2	æ	1	L	4C		CP-15	613	3251
L																		

TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued 51.2 KB DATA SYSTEM

Γ		Measurement	:- :	:: -		21.2 KB	1						 	Γ.		Ι		<u> </u>
	Number	Title	Unit	App ran		Loading number				N for rates	nat : 5/5		Summary TWX number	ana tabs	CM alog and ots	Strip chart record setup no.	Primary MSK format no.	Thrift tab
				Low	High		1	5	ú	8	9	30		STD	SP	,,,,,		
(F0018T	TEMP OLY EVAP OUTLST LIQUID	o _F	25	75	1004116	1			.1	.5	Ţ	4,20,21	ЧA		CF-13	613	3251
1	F0019Q	QUANTITY SLYCOL ACCUM	PCT	٥	100	31010kh	1	.a:		.2	.5	10	, <u>1</u>	I.A		CP-13	613	3251
	:F0020T	TEMP SPACE RADI- ATOR CUTLET	or	-50	+100	1005116	1	.1		.1	.5	1	ļ .	4A		CP-13	613	3251
(2F0034#	BACK BRESS GLYCOL EVAPORATOR	PSIA	. 0:	.25	1002052	1	.2): . 	.2	1	1	.	46		CF-13	613	3851
	F0035R	FLOWRATE ECS 02	==/#R	.2	1	1101049	1	э.	.2		.5	10	3,4	ŀΕ		CF-17	613	5250
١	:F0036P	reg Supera Reg Supera	PSIC	0	150	1102073	1	.2	34	.2	1	10	#	4E		CP-17	613	3250
٥	:F0070P	FIRES SEC GLYCOL POMP OUTLET	PSIG	a	60	1105044	1	.2	\ \	.2	1	10	h.	4E		CP-17	613	3251
C	F0071T	TEMP SEC EVAP OUTLET LIQUID	O _F	25	75	1101030	1	.1		.1	•5	10	. <u>4</u>	4c		CF-15	613	3251
0	:F0072Q	QUARTETY SEC GLYCOL ACCUM	PCT	.0.	150	1104060	1	•1		.1	-5	10	<u>.</u>	4C		CP-15	613	3251
c	F0073P	FR SECONDARY EVAP OUT STEAM	PSIA	0	.25	1003084	1	1	: •	.1	-5	1	Į.	l.c		CP-15	613	3251
c	F0150E	ELESS H2O AND ELECOL TARKS	PSIA	0	50	1034084	1	.2		.2	1	1	. 4	4A		CP-13	613	3250
1	CFOL57P	RATE GEYCOL FROM THERMAL LOAD	13/5	130	300	1103057	1	.2		.e	1	10	4	4p		CP-15	613	3260
c	F0181T	TEMP GLYCOL EVAP	o _p ,	35	100	1034052	1	.1		.1	.5	1	1	4A		CF-13	613	3251
s	F0260T	TEMP FRIMARY RADI- ATOR THEFT	o _F	55	120	1016116	1	.1		.1	.5	1	4	4A.		CF-13	613	3251
5	F0262T	TEMP SECONDARY RADIATOR INLET	S _p .	55	120	1002084	1	1		.1	.5	1	4	46		CP-15	613	3251
s	F02637	TEMP SEC RADIATOR OUTLET	o _F	30	70	1030116	1	.1		.1	.5	ı	4	4C		CP-15	613	3251
s	F0266X	RADIATOR FLOW CONT SYS 1 OR 2		5YS 1	SYS 2	1101098н	1	1		1	1	10	L.	11	10	CE-2	613	3251
a	F04601	TEMP URINE DUME NOZZLE	or	0	300	1038116	1	-1	1	.1	.5	1	4	īσ		CF-15	613	3250
c	F0461T	TEMP WASTE WATER DUNP MOZZLE	o <u>r</u>	٥	100	1028052	1			.1	.5	1	Ŀ	40		CF-15	613	3250
c	G7040V	120 VDC PIPA SUPPLY DC LEVEL	VDC	85	135	1028084	1	.2		s.	1	1	6,21,22	6	5A	CP-18 CO-3		3620
، ا	:G1110V	2.5 VDC IM BIAS	VDC	٥	5	1104058	1	1		1	1	1	6	6	5A	CP-18 CO-3		3620
Ŀ	لـــــ		<u> </u>	<u>L.</u>				1	1	1	Ц.	丄			[



TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued 51.2 KB DATA SYSTEM

	<u> </u>				<u> </u>	1.2 KB D/	AIA.	212	I CIM									
Number	Measuren Title	nent	Unit	App ran		Loading number				l form	nat S/S		Summary TWX number	ana tabs	CM alog and ols	Strip chart record setup	Primary MSK format	Thrift tab 110.
i				Low	High		1	5	6	8	9	30	Ţ.	STD	SP	no.		
CC12C1V	nd 28v .Skc i Rdi	· · · · · · · · · · · · · · · · · · ·	VR.S	. 0	31	1031052	1	.2			1	1	6,21,22	5 A		CP-18 CO-3		3620
CG1331V	3.2 pc 28 v supply		VEMS	o.	31	1025052	1	.2		.z	1.	1	6,21,22	5Λ.		CF-18 CO-3		3630
CG1513X	26 v iku standay			OFF :	STBY	1103067B						10		ā	10	00-3 02-4		3620
CG1523X	28 v CMC OFFRATE			OFF	OER	11030670]: -	10	.:	Э.	10	CC-3 CE-4		3620
.CG1533X	28 V OPIX OPERATE			OFF	0PR	12030670						10		9	10	CO-3 CE-4		3620
CGS112V	IG IX RESOLVER OUT- FUT SIN		DEC	0	360	1102060	5	1		1	1	10	6		12A	co-3		3620
CC5113V	IG 1X RESOLVER OUT- FUT COS		DEG	0	360	1102081	5	1		1	1	10	6		12A	co-3		3620
CC2117V	IGA SERVO ERFOR IN PHASE		VRUS	-3	+3	1201014	5	.5		.5	5	50	6		125	.00-3		3620
CG2142V	MG 1X RESOLVER OUT- PUT SIN	Silver in the second	DEG	٥	360	1102089	5	1		1	1	10	6		124	co-3		3620
C051/13V	MG 1X RESOLVER OUT- PUT COS		DEG	0	360	1102090	5	1		1	1	10	6	j	12A	CO-3		3620
CGS1,144A	MGA SERVO ERROR IN PHASE		VRLS	-3	+3	1201013	5	•5		.5	5	50	6		129	co-3		3620
CG2172V	OG 1X RESOLVER OUT- FUT SINE	p .	DEG	ð	363	1102091	5	1		1	1	10	6	is i	12A	co-3	1	
CG2173V	OG 1X RESOLVER OUT- FUT COS		DEG	0	360	1702025	5	1		1	1	10	6		12A	co-3		·
CG2177V	OGA SERVO ERROR IN PHASE		VRC 15	-3		1201015	5	.5		.5	.5	50	6		123	CO-3		3620
CG2300T	PIPA TEMPERATURE		O <u>F</u>	+120		1016064	1	-1.		.1	.1	1	6,21,22	5A	-	CO-3 CP-18	0683	3620
CG3722V	SHAFT CDU DAG OUT- FUT		VEUS	-12	. s.:* 	1102058	5	.5		1	5	10	. 6		12A	co-3	0683	3620
	TRUMMION COU DAG		VRUS			1102059	5	•5		1	5	10	6		12A	CP-3	0683	3620
cc5040x	CVC WARNING			WARK		1103099A						10		9	70	CE-4		3635 I
CH3500H	FDAT CHASH ATT		DEG	-5 -15	+15	5101062	5	1			5	50	6		135	CO-1	0683	3630
СН3501H СН3502H	FDAI CM/SM ATT ERBOR YAW FDAI CM/SM ATT		DEG	-5 -15	+15 +15	5101063	5	1			5	50	6		133	CO-1	0683	3630
CASSUER	EPROR ROLL	<u> 4 14 i</u>	DEG	-15 -20	+15 +20	1201016	5	1		1	1	10	- 6		13 ^B	CO-2 CO-1	.0683	3630

TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued 51.2 KB DATA SYSTEM

-			<u></u>	-		71	.2 KB DA	IIA 2	121	EIVL	· 			· .					
	Number	Measur Title	ement	Unit	App ran		Loading number				l forn rates			Summary TWX number	ani tabs	CM alog and ots	Strip chart record setup	Primary MSK format	Theift tab no.
L					Low	High		1	5	6	6	.3	30		STD	SP	ло.		
c	H3503R	FDAL SCS BODY PATE PITCH		DEG/ SEC	-1 -5 -10	+1 +5 +10	1201021	5	1		1	5	50	6	10A	13/	CS-2, -1,-5	0653	3630
c	H3504R	FDAI SCS EODY PATE YAW		EG/ SEC	-1 -5 -10	+1 +5 +10	1201022	5	1		1	5	50	6	10A	134	00-2, -1,-5	0683	3630
C	H3505R	FDAI SCS BODY RATE		DEG/ SEC	-1 -5 -50	+1 +5 +50	1501053	5	1	2.7	1	5	19	6	IÓA.	13A	co-2, -1,-5	0683	3630
	野東海	GHEAL POSITION PITCH 1 OR 2		DEC	-5	+5	1201024	5	I		1	5	50	6		138	co-2,	GE53	3630
	H3516H H3546X	GIMBAL MOSITION YAW 1 OR 2 ROS SOLEMOID ACT		DEG	- 5	+5	1201046 2201018A	5	1		1	5	50	6		138	CO-5	o653	3630
	13546X 13547X	C3/13/X RCS SOLENOID ACT A1/14/X			PIRE, OFF FIRE,	ARM	2201018A								5		CO-1, CE-2	/	٠
C	13548x	AL/14/X RCS SOLEROID ACT A3/23/-X			PIRE, OFF		2201016c								5.		CE-2 CE-2		
CI	13549X	RCS SOLENDED ACT			PIRE/ OFF	ARM	2201018D		- :						5		CD-1, CE-2		
CI	13550X	RCS SOLENOED ACT D3/25/X			PIRE/ OFF	ARM	2201018E								5		CC-1, CE-2		
	13551X	ECS SOLENOTO ACT B4/26/X			PIRE/ OFF		5507078Ł								5	*	CG-1, CE-2		en en en en Handele en en en en en en en en en en en en en
	13552X 13553X	ROS SOLENOED ACT B3/15/-X ROS SOLENOED ACT			7.EE/ 0.EF		2201018G								5		CE-2		
	13554X	D4/16/-X HCS SOLEMOID ACT			CPE		2201019A								5	. *: .	00-1, 02-2 00-1,2		
CF	13555X	BI/11/Z RCS SOLENOID ACT D2/22/Z			410 (411)	ARM	22010195								5		CE-2 CE-2		
CH	13556X	ECS SOLEMED ACT DI/21/-Z			FIRE)	ARM	220101 <i>9</i> F								5		CO-1,2 CE-2		
CH	1355"X	RCS EOLENOID ACT B2/12/-Z			Oll LEE\	ARM	2201019B								5		CO-1,2 CE-2		
	1355Bv	RCS SOLETOID ACT A1/Y			OFF		2201019G								5		CC-1,2 CE-2		
	3559X 3560x	RCS SOLENOID ACT C2/T RCS SOLENOID ACT			HE /		22010152								5		CO-1,2 CE-2		Y.
		C1/-1			OFF	A-11	-comilys								5		co_1,#	ore swill.	.i

TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued 51.2 KB DATA SYSTEM

CH3574X I	Measurement Title HCS SOLENDID ACT	Unit	App ran		Loading				l form			Summary	an	CM alog	Strip	Primary	Thrift
CH3574X I					number							umper TMX		ots .	record setup	MSK format no.	tab
CH3574X I		7	Low	High		1	5.	6	á	3	30		STD	SP	1 110.		
C			7 IBE 075	ARM	2201015f								5		00-1,2 0%-2		
	iraislational Controller +x CMD		CFF	011	11040670						10		6	10	Œ -3		3635
	ranslational Controller -x CMD		OFF	on .	1104067=						10		ó	10	CE-3		3635
	TRANSLATIONAL, PONTROLLER +Y GYD]	CT	011	11040671						10		6	10	CE-3		3635
	erauslational Controller - 7 CMD		OFF	ox	1104068F						10		6.	10	CE-3		3635
	HANSLATIONAL NUMBOLIER +2 CMD		OFF	on	1104068H						10		6	10	CE-3		3635
	PANSLATIONAL CHIROLTER -Z CHI		OFF	on	11040 YB				ė į		10		6	10	o <u>z</u> 3		3635
	ACS TWO AUTO CON-	VDC	-10	+10	1201055	5	.5		1	5	10	6	- -	133	co-2	c6∃3	3630
	CS TVC AUTO COM- VAID YAM	VDC	-10	+10	1201053	5	•5		ı	5	50	ā		13B	CO-5	o6§3	3630
7	iot cominol/Mive Pitch C.D	UDA	-10		5101036	5	.5		1	2	50	é		13A	CO-1, -2	0683	3630
Y	ict control/veve IAN CVD	VDC	-10		5101125	5	•5		*	2	50	6	**.	AEI	03-1, -2	0653	3630
ħ	OLL CHE	DEC	-10	+10	5101126	5	-5		1	5	50	6	٠. :	13A	20+1, -2	366 <u>3</u>	3630
H	TTITUDE DEADBAID EDIVIN HIGH FRO RATE LINTT		LOW	MIN	11020675						10		6 ú	10	CO-1, CE-3		3630
YOJW H	MORE THU TOTAL LITTEE		In	nich	ر الرا دهاء سند	3.1					10				-2, CE-3		3635
	TAI SCALE EMBOR 5, PAIR 5		OFF	0π 0π	1102067E 11 12067E						10 10		é	10 13	다.그 당근 당근목		3635
C	os deuta v Ig-im/csm fos		CSM	IH/ CSM	1102068c						10		6.	10	CE-3		3635
¥	NIR NCS SW ID 1 NABIE POS				1104c <i>y</i> re						10		6	10	CE-3		3635
Ē	DIR HCS SW 100 2 CIÁPLE POS				111040970						10	erija ere Norder Official ere	ė	10	CZ-3		3635
D	PRIVER NO 1		OFF	AEM	11010980						10		6	10	CD-2, CE-3		3635
	HIVE NO 2		OFF	ARM	11020950						10		ō	10	CE-3, 20-2		3635

TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued 51.2 KB DATA SYSTEM

7					51.2 KB D	AIA	1 3 Y	115	IVI				,				 -
Number	Measurement Title	Unit	App ran		number Loading				N fon rates		;	Summary TWX number	an tab:	CM alog s and lots	Strip chart record setup	Primary MSK format	Thrift tab no.
		1	Low	High		I	5	6	В	2	30	1 .	STD	SP	no.	""	
сн3606х	LETT CYCLE SW OFF POS		ori	OFF	1104098A	-			1	ľ	10		6	10	CE-3		3635
сн3607Х	SC CONTROL SOURCE SWITCH		erc	SCS	1102068E						10		6	10	CE-3,		3635
сн3609х.	ROLL MAN ATT EW ACCEL CHI POS		OEF	оп	1104098g						10		6	10	CE-3		3635
сн3610х	R MAH ATT SW MIN IAP CAD ROS		0FF	ON	1104098ii						10		6	10	CZ-3		3635
CH3612X	PITCH MAN ATT SW ACCEL CHO POS		CFF	ON	11040980						10		6	10	CE-3		3635
CH3513X	P MAN ATT SW MIN IND CND POS		OFF	OIT	11040980						10		6	10	CE-3		3635
CH3615X	YAN MAN ATT SW ACCEL CWD POS		OFF	011	1104098E						10		6	10	CE-3		3635
снз616х	YAN NAN ATT SN MIN IMP CMD POS		OFF	O)1	11040381						10		6	10	CE-3		3635
CH3623X	GYRO 1 COMS SPIN MIRS RUN DET		LOW	HOR!4	11020670					. : 	10		6	10	CE-3		3635
сн3624х	GYRO 2 COME SPIN MIRS RULL DET		TOM	:XORM	11 02 067G						10		6	10	CE-3		3635
СН3635Х	EVAC MODE SW-ROLL ATT 1 RT 2		OFF	011	1105093A	-					10		6	10	CE-3		3635
CH3636X	EVAG MODE GW-ROLL RATE 2		OFF	on	11050991			j·.			10		6	10	CE-3		3635
C.#3638X	EMAG MODE SW-FEICH ATT 1 RT 2		OFF		1105099C						10	1	6	10	CE-3		3635
CH3639X CH3641X	EVAG MODE SW-YAW ENAG MODE SW-YAW		OFF		1105099D 1105099E			٠.			10		6	10	CE-3		3635
CH3642X	EMAG MODE SW-YAW		OFF	011	11050992						10		6	10	CE-3		3635 3635
CH3666C	EATE 2 TVC PITCH DIFF	AMP			2201008	5	.5		1	5	50	6)	13A	co-2	0683	3630
C113667C	CINICH CHEERT TYC YAN DIFF	AMP			1201056	5	-5		1	5	50	6		13A	C0-2	0683	3630
G100601	CLUTCH CURRENT EKG COMMANDER IM COUCH	MV	-2.5		2201007	÷							1.1 A	14A	CP-32		
CJ006IL	COUCH EKG COMMANDER CIR COUCH	hv	-2.5	+2.5	2201005									1 ⁴ A	CP-32	•	
C300653	ENG IN PILOT COUCH	MA	-2.5	+2.5	2201006									14A	CP-32		

TABLE IV. - LUNAR MODULE TELEMETRY DATA SUMMARY

1		Measurement				MODULE	_						1 - 7		 · ·	T	"' "	 	7
	Number	Title	Unit	App ran		Loading number				V form			Summary TWX number	ana tabs	CM log and ots	Strip chart record setup no.	Primary MSK format no.	Thrift tab no.	
J	<u> </u>			Low	High		1	5	6	8	9	30		STD	SP				
1	CJ0200R	RESP RATE CAD IN COUCH	Offi	-5	÷õ	5101064									I!A	CP-32	Ĭ .	į i	ŀ
	C102013	RESP RATE ON FELOT CTR CORCH	они	-5	+5	51,01033									11:A	C2-32			
	CJ0202R	RESP RATE IM PILOT RH COUCH	они	-5	+5	51010-4									14A	CP-32			١
	CK0026A	CM ACCEL X-AXIS	G	-2	+10	1201045	5	.1		.5	•5	50	. 5		15A:	CO-4 CP-33			
	CK0027A	CM ACCEL Y-AXIS	Œ	-2	+2	5101127	5	.1		.5	-5	5 0	5		15A	CO-4 CE-33			
	CKOO28A	CM ACCEL Z-AYIS	G	. - 2	+2	5101128	5	-1		.5	.5	50	5		15A	CP-33 CO-4			
	ск1040х	16 im data acq camera shulter offi	VDC:	CLED	OPES	1201031							<u> </u>		15A	CP-34			
	CK10#3X	70 pm camera shupter open	VDC	CLSD	OPE!	1201031									16A	CP-34		7000	
	CK70#4X	Luivar top camera shutter open				1201031													
	CK1051K	RADIATION DOSEMETER 1	B/H3	0	1000	1105090	1	.1			.1				17A	CP-35			
	CK1052K	RADIATION DOSINETER 2	P/HB	٥	1000	1101058	1	.1	5/ 	.1	-1		*		17A	CP-35			
	CK1053R	DOSINETER RATE CHANGE	VDC	۵	5	1050084	1	.1	l Lat	1.1	-1		.j- 3i	1	17A	CF-35		3798	
	\$11043P	PAN CAMERA N2 TAIK PRESS	PSIA	0	5000	1101124	1	.2			.1			Ela		EP-1	1345	7000	
1	SL1109T	UVS EKECTRONIC YEMP	o _F	-100	+200	1101026	1	.1		-1	.1			EIA		EP-1	1345	7000	
	51,12021	TEMP THEM ENVIR BUL MS221.R62	οĖ	-100	+200	1101057	1	.1		-1	.1			Ela		EF-1	1345	7500	
	SL129/IT	TEUP UPM EIVIR EXC TS278,R6	op		+200	1104049	1	.1		.1	.1			Ela	1	EP-I	1345	7500	
	SL1206T	TEMP TIRM ENVIR ENG XS257,86	o _E	-100	+200	1102027	1	.1		.1	.1			ΣlA		EP-1	1334	7500	
	SLIZLIT	THE THEN ENVIR BAN C M2 IN 1	o₽		+200	1104031	1	.1		.1	.1			EIB		EP-2	1345	7500	
	SLIZIZT	THE THEM ENVIR PAH CAN'T 12 T	o <u>-</u>		+200	1104092	1	.1		.1	.1			EIB		EP-2	1345	7500	
	SL1215T	TEMP THEM ENVIR MON BOX	OF.		+200	1105107	1	.1		1	-3			EIS		EP-2	1345	7500	
	SL1217I	TEMP THEM ENVIR ENG XS305,R	o-	-100		1105124	1	- 1	.:	-1	-1		rija e di B	EIB		Ξ₽-2	1345	7500	-
ı	SL1220T	TEMP THEM ENVIR SHEL XS206.5,870	о <u>-</u>		240	1103090	1	1		.1	.1			ELA		EP-1	1345	7006	
١	SL12237	TEMP THEM ENVIR SHIP X5236.1,870 TEMP HE ANT SERT SM APT HS	ش	106) [1102105	1	1		.1	.1			ELA		EP-1	1334	7000	
l	SE1250E	CSAR RF POWER CUTPUT HEL	Volt		+200	1103092	1	1		.1	1			EIA		EP-L	1334	7000	
l	SL1251E	CSAR HP POWER OUTPUT HF2	Volt	٥		1020052	1				1		u tu Arab T	E2A E2A		EF-3	1334	7200	î
	S1.1251E	CSAR FF POWER OUTPUT VHF	Volt	0	5	1020052	1							E2A		EF-33	1334	7200 7200	
L				لــا	ليا				\perp	┙							+35+	1200	1

TABLE IV. - LUNAR MCDULE TELEMETRY DATA SUMMARY

	Measurement				MODULE	7					(777	,	<u> </u>		1		
Number	Title	Unit	App ran		Loading number				N forr rates			Summary TWX number	ana tabs	CM tlog and ots	Strip chart record setup	Primary MSK format no.	Thrift tab
ļ	<u> </u>		Low	High		1	5	6	8	2	32		STD	SP	110.		
SL1255F	CSAN RF OSCILIATOR FREQUENCY	ADC.	0	5	1033084	1				1		/	£2A	ļ	EP-3	1334	7200
SL12567	CSAR INTERNAL TEMPERATURE	ځ.	, s	150	1104075	1				1			BOA		.EP-3	1354	- 7 230 -
SE1257V	CSAR BECEIVER GAIN HE 1	DEM	ŝij.	77	1046116	1				1		[EZA		EP-3	1334	7230
SL1258V	CSAR RECEIVER MAIN HP 2	Devi	ú¥	31	1040116	1				1			EΆ		EP-3	1334	7230
SL1258V	CSAR RECEIVER GAIN VHF	DE!	53	35	1040116	1				1			EZA		EP-3	1334	7230
SL1261E	CSAN HOISE POWER HF 1	DEM	-75	-63	102911 6	1				1			E≟C		EP-5	1334	7600
SITEGIE	CSAR SPECULAR POWER AF 1 - MODE 1	DRM	-79	-62	1201047	1				1	1		REC		EP-5	1334	7200
SL1261E	CSAR SEECULAR POWER IN 1 - MODE 2	DE'I	-65	-59:	1201047	1				1		·.	E2C		EP-5	1334	7200
SL1261E	CSAR SFECULAR POWER HF 1 - NODE 3	D2!4	-62	-56	1201047	1				1			EEC		EP-5	1334	7⊭33
SL1261E	CSAR SPECULAR POWER HE 1 - MODE 4	DEN	-58	-48	1201047	1				1			£2 C		EP-5	1334	7 200
ST1261E	CSAR SPECULAR POWER HF 1 - MODE 5	DEM.	-60	-35	1201047	1.				1			EEC		EP-5	1334	7200
SI1262E	CEAR LOISE SOWER HF 2	DP!	-92	-73	1201048	10		:		10			Eac		EP-5	1334	7200
5L1262E	CSAR SPECULAR POWER HF 2 - WOLE 1	DEM	-60	-68	1201048	10				10			E2C		EP-5	1534	7250
SL1262E	CSLR SPECULAR FOWER VIFF + MODE 1	DEM	_8£	-78	12010 ¹ -8	10				10			ESC		EP-5	1334	7263
St1262=	CSAR SPECULAR POWER HE 2 - HOUSE Z	DEM	-88	- 76	1201048	10			: :	10			E2C		EP-5	1334	7293
5L1262=	CSAR SPECULAR POWER WIF - MIDE 2	DH!!	-83	-61	1201048	10				20			E2C		EP-5	1334	7200
SL1262E	CSAR SECULAR POWER HF 2 - 10DE 3	DEN	-66	-60 	1201045	10				10			E2C		er-5	133-	7200
Stap6ce	CSAR SPECULAR POWER VHP - NODE 3	DEM	-85	-60	1201048	10				10			B2C		EP-5	1334	<i>1</i> 203
SL12623	CSAN SPECULAR FOWER HF 2 - NODE 4	DBM	62	-56	1201049	10				10			E2C		EP-9	1334	7200
0112632	CHAR SEECULAR POWER VHP - MODE 4	751	-61	-56	1201048	10			: :	10			E2C		EF-5	1334	7 <u>2</u> 00
SLIZEZZ	CSAR SFECULAR POTER HF 2 - NODE 5	DEM	-55	-40	1201048	10				10			E¥C		EF-5	1334	7230 ·
SL1263E	CSAR SEECULAR POWER VHE - 1992 5	DE:1	-79	_54	1201048	13				10			EEC		EP-5	1354	7230
SL1275?	OPT EEC FILM CASSETTE TELF	°F	-40	153	1104041	1	7.7			1			ESB		EP-4	1334	7201
SL1276V	OPT HEC CONTROL MODE STATUS	VDC	٥	5	1631084	1) 		4	1			E2B		Ep.h	1334	7201
511277V	OPT REC ECHO STATUS	VDC	٥	5	1032084	1		:		1			ESE		EP-4	1334	7201
91.1278v	OPT REC VILED STATUS	vinc	0	5	1102106	1				1			EZB		EP-4	1337	7201
SE12770	OPTICAL RECRUR FILM REMAINING	ŕ	0	500	1019052	1				ı			E2B	7	EP-4	1324	720 L
				7 2													
		ــــــــــــــــــــــــــــــــــــــ	<u> </u>	لـــــــا		_4					لمت						

TABLE IV - LUNAR MODULE TELEMETRY DATA SUMMARY

I	· - · ·	Measurement				Γ	Ť						T	<u> </u>		T .		
	Number	Title	Unit	App ran		Loading number				N form			Summary TWX number	ana tabs	CM alog and ots	Strip chart record setup no.	Primary MSK format no.	Thrift tab no.
	.			Law	Hīgh		1	5	.ii	<u>.</u> 6	2	_32_	<u></u>	STD	SP			
١	SPOSSIP	HE PRESS TAUK	PSIA	, ·o ·	5000	1101041	2	.5		-5	1	10	5	6B		CP-20	693	3670
	SPOOSE	PRESSURE OXIDIZER TANKS 1/2	PSTA	0	250	1101042	2	1.		1	5	10	· • /	69		CP-80	683	3670
1	врофобр	FRESSURE FUEL TAIKS 1/2	PSIA	0 ;	250	11910/43	2	1		1	5.	10.	5	áa.		CF-20	683	3670
	SPCOL7T	TEMP SPS UPPER HE TANK	o _F	-10¢	+200	1005052	1	.1		.a	.5	1	5	6C		CP-21	683	3670
l	SPOOZZH	POSITION FUEL/OX VIN 1 POT B	DEG	·a	90	1101108	5	.5		.5	5	10	ĝ	ćΑ		CP-13		3670
	SP0023H	POSITION FUEL/OX VLV 2 POT B	DEG	ο,	90	1101113	5	.5		•5	5	10	. 5 .	6A		GP-19		3670
	SP0024H	POSITION FUEL/OX VLV 3 POT B	DEG	0	, 90,	1101181	5	-5		-5	5	10	5	£A.		02-19		3670
	SFOC25#	POSITION FUEL/OX VLV 4 POT B	DEG	o	90	1101122	5	.5		-5	5	10	5	ĆA.		CP-19		3670
	SP005.iP	FRESS OXIDIZER TAIKS	PSIA	¢ .	-250	1101042	2	1		ì	5	10	5	65		CE-SO	683	3670
	SPC0'-5T	TEMP ENG VALVE BODY	a _r	- 10	+200	1013052	1	2	7.	.2	-1	1	. 5	éc		CP-21	6 83	3610
	SP004ET	TEMP ENG FUEL FEED LINE	o _r	0	+200	1105106	1	.2		.2	.1	10	. 5	6C		CP-21	683	3610
1	5P0047T	IEMP ENG OX FEED LIDE	o _F	J	+200	1008384	1	.z	,	.2	.1	1	5	čC		CP-21	€83	3610
	SE00547	HEVP I OX DISTRUCTION LINE	°F	-5	+204	1015054	1	.2		-5	.2			5A		CP-18	683	3610
	SP0055T	TEMP OX SMP TK SURF PAY	o _F	ٍ ٥	150	1048052	1	.1		,-1	.I		5	6c		CF-21	704	3610
	SP0056T	TEMP SPS FU SMP TANK SURP BAY 5	D _F	o	150	1047052	1	.1		-1	.1		ŝ	6¢	٠.	G5-ST	404	3610
1	SP00571	TEMP 1 FUEL DISTRIBUTION LINE	_ه	-3	+203	1020084	1	.2		.5	.2		5	5A		CP-18	683	3610
	SP0058I	OXID STORAGE TANK SUFF TEMP DAY 3	o _r	ð,	150	1046034	1	.1		.1	.1		5	6c		CB-SI	404	3610
	SF0059T	FUEL STOPAGE TAKE SURF TEMP BAY 6	<u>-</u>	φ.	150	1047084	1	.1		.1	.1		5	6C		C2-21	404	3610
Ì	SP0062T	ENG INJECTOR FLANGE TEMP NO. 2	o _f	-2	+588	1017052	1	.a		.5	.2		, 5	5A		CP-18	674	3610
	SP0066P	SHESS FUEL TANKS	PSIA	0	249	1101043	2	1		1	5	10	5	6 <u>B</u>		CF-20	€83	3670
	SP0630P	SPS PRPILIT TKS HEA PRESS	PSIA	٥.	5000	1004052	1	-5		•5	1	1	5	ćB.		CP-20	663	3670
١	SPC6DLP	BPS PRPLAT TKS 1828 PRESS	PSIA	0	5000	1004054	1	-5		-5	ı	1	5	63		CF-20	683	3670
	SPC655Q	QUAN OX TANK 1 FRI-TOTAL AUX	PCT	3	50	1009084	T	ı		1	1	1	. 5	ēΑ.		CP-19	683	3670
	SP0656Q	quait on tain 2	PCT	o	60	1010052	1	1		1	ı	1	5	бA		CF-19	683	3670
	SP0657Q	QUAN FUEL TANK 1 FRI-TOTAL AUX	PCT	o.	. 50	1010084	1	1		1		1	5	6A		CF-19	633	3670
	SP065KQ	PRI-TOTAL AUX QUAN PUEL TANK 2	PCT	a .	, 63	1011052	Ι	1		1	1	1	5. <u>5</u>	6A		C7-19	683	3670
	SP0661P	PRESS ENGLIS CHAMBER	PSIA	0	150	1201054	5	1		1	5	50	. 5 , '		16A		653	3670
١	SP0930P	FRESS FUEL SM/ENG INTERPACE	PSIA	0	300	1105727	5	-5		-5	5	10	5	бв		CP-20	683	3670
	SP0931F	PRESS OX SM/SIG INTERPACE	PSIA	o	300	1105059	5	•5		-5	5	10	5	бВ	# 1 P	CP-20	683	3670

TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued

			<u> </u>	51.	2 KB DAT	<u> </u>	YSTE	M		·	<u></u>	<u> </u>			,		<u> </u>
Number	Measurement Title	Unit	App ran		Loading number				N fon rates	maL s 5/S		Summary TWX number	ana tabs	CM alog and ots	Strip chart record setup	Primary MSK format	Thrift tab
			Low	High		ī	5	6	В	,	30		STD	SP	ло.		
CROSOLP	HE PRESS TANK 1	PSTA	0	5000	1006116	1	1		1	ı	10	5	/A		CF-22	2683	3570
CROOSE	he press tank 2	ISLA	o .	5000	1007116	1	l.		1	ī	10.	ä	7 A		CF-55	0683	3500
CROOOST	HE TEMP TANK 1	o _F	0	+300	1105042	1	1		1	-5	13	5	7A		CP-22	0693	360.1
CROCOLT	HE TEMP TANK 2	o _e	Q	+300	1105043	1	1		1	÷	10	5	7A		CP-22	0653	3600
CR0035P	PRESS CHIECS HE MARIFOLD I	PSIV	o	14.00	1101075	5	l		1	1 .	10	5	7 a	:	CP-22	0683	3600
СкоозбР	MESS CH-ROS HE PANTFOLD 2	PSIA.	0 1	400	1101076	5	1		1	1	10	5	7A		CP-22	0583	3650
SR5001P	HE FRESS TANK A	ISIA	0	5000	1008116	1	1		1	ı	1	5	73		CP-23	0653	3510
SR5002P	HE FRESS TANK B	isla	0	5000	1009116	1	-		1	1	1.	5	· 78		CI-53	0683	3510
SR5003P	HE FRESS TANK C	PSIA	0	5000	1010116	1	1.		1	1	ı	5	7E		CP-23.	F660	3520
SR5004P	HE FRESS TANK D	PSIA	0	5000	1011116	1	1		. 1 .	L	1	5	7B		cP-23	0683 8	3525
5H5013T	HE TEMP TANK A	°F	0	+100	1105073	L	.2		.2	.2	10	. 5	70		c₽-2 5	0683	3510
SR5014T	HE TEMP TANK B	o _F	0	+100	1105074	1	.2		2,	.2	10	5	72		C P-25	0683	3510
SR5015T	HE TEMP TANK C	°ş	٥	+100	11.05075	1	.2		.2	-2	10	5	70		CF-25	0683	3523
SR5016T	HE TEMP TANK D	°F	O	+100	1105076	1	.2		.2	.2	10	5	70		CP-25	0683	3520
SR5025Q	quaii sm he fhess/temp rated a	PCT	0	100	1031116	, 1 .	.2		2	.2	1	5	770		CP-25	0483	3510
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TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued

51.2 KB DATA SYSTEM Measurement PCM MSFN format Strip analog tabs and Summary rimary Thrift sample rates 5/5 chart Approx. Loading TWX MSK Number Title Unit record tab range number number plots format setup no. 110. STD SP Low High 8 9 SR50260 QUAL SM HE PRESS/TEMP RATTO b PTT a 100 1033116 .2 .2 70 . CP-25 0683 3510 5R5027Q QUAN SM HE PRESS/TEMP RATIO C PCT ø 100 1034116 .2 7D CP-25 0583 .2 3520 BE50280 QUAR SM HE PRESS/TEMP RATIO D PĊT 100 1035136 .2 .2 70 ı CP-25 **06**63 3520 SR5065T TEMP ENGLISE PACKACE A 0 1046052 +300 1 .1 .1 ı 5 7E CP-26 1683 3510 SR5366T TEMP ENGLIE PACKAGE B o_r 2 +700 1006084 L .1 .1 ı. Æ CP-26 1663 3510 SR5067T TEMP ENGINE PACKAGE C 0 +300 1007052 CP-26 Æ **2683** 3510 SRSOGOT TEMP ENGINE PACKAGE D +500 1:007084 .1 7E 3683 3520 CP-26 SR5067T TEMP OX FEED LUIE FLTR QUAD A ٥£ æ 150 1101081 0674 7F CP-27 3525 SR5070T TEAP. ON REED LINE FLIR QUAD E °F Ċ 1104082 1 0674 150 .1 ٠î 5 7F CF-27 3525 SR5071T TEMP OX FEED LINE PLIER QUAD C ٥F Ģ 1001084 1 150 .1 72 CF-27 ¢674 3525 SR5072I TEMP OX FEED LINE FLIR QUAD D F Ð 150 1104050 1 .1 .1 77 CF-27 0574 3525 TEMP. PRI PU TR OUT SURF TEMP SR5073E o 1101105 .1 1 150 . 3 5 72 CP-27 0674 3525 SR5074T TEMP FRI. FU TK OUT SURF QUAD B ᅙᇎ a 1104106 150 1 .1 . 1 75 CF-27 0674 3525 SR50751 TEMP. FRI FU TK OUT SIRE Offan O ٥ 150 1104107 1 .1 .1 5 7F 0674 3525 CF 27 5R5076T TEMP. FU TK OUT SURF QUAD B ø 150 3704108 0674 . 1 5 76 CP-27 3525 SR5729F A HE MANIFOLD PRESS 0 1102011 PSTA 14C0 0583 10 5 CP-25 3510 SR5733E OX PANIFOLD PR SYS A 1101031 300 ı 78 0683 3510 10 5 CP-23 SR5737P FUEL MANIFOLD PR SYS A o683 PSIA 0. 400 1103074 1 1 10 5 78 CE-53 3510 SR5776P B HE MANIFOLD FRESS 51A ŀο 400 1102012 Ŀ 1 1 10 5 76 CP-23 0683 3510 SR57802 OX MANIFOLD PR SYS B SIA 300 1101089 1 ı 10 5 CP-54 0683 1 SR57847 FUEL MANIFOLD PR SYS B SIA o 400 1103076 0683 10 CP-24 3510 7C 8855172 C HE MANIFOLD FRESS STA 400 1705047 10 7C CP-24 3683 3520 5R5820P OX MANIFOLD PR SYS C PSIA a 300 1101092 1 1 10 5 70 CP-24 0683 3520 SR5821P OX MANIFOLD PR SYS D PSIA ٥ 1101105 300 1 1 1 10 5 70 CP-24 0663 3520 9R5822P FUEL MANIFOLD PR SYS C PSIA 1104011 0 400 1 ĻO 5 CP-24 0653 3520 SR5823P FUEL MARIFOLD PR SYS D PSIA ò 400 110401E 10 7C CP-24 0683 3520 SR5830P D HE HANTFOLD PRESS PSIA 0 400 1104076 10 0683 70 CP-24 3520

TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Continued

			· 	51	.2 KB DA	TA:	SYS	ľΕΜ	<u>.</u>			· ·		<u></u> -			
	Measurement	<u> </u>	Арр		Loading			/SFI	l fon			Summary TWX	an	CM alog s and	5trip chart	Primary MSK	THEFT
Number	Title	Unit	ran	<u> </u>	number	L	-	1	, ·	T -	1	number	р	lots	record setup no.	format no.	tab no.
xcsoca	EDS ABORT REQUEST A		Low	High ABORT	1101032E	1	- 5	Ú	<u>.</u> 8.	9	.30 .10		STD 7	SP 10	gg_l:		
BEOORIX	EDS ABORT REQUEST B			ABORT	1101092	1	1				1	l			1	ļ. ·	
			1.GFM	ABOFI	100						10		7	10	CE-4		
CS0150X	MASTER CAUTION-WARNING ON		WARII OFF	DORM	11010958						10		7	10	CE-4	1465	3010
IS0200H	ANGEE OF ATTACK	Po ID	a	5	1102057	5					١.	/** *		11	CP-27		
CS0220T	TEMP DOCKING PROBE	þ.	-10a	+300	1008052	1	.1		.1	.2	1.	3	EIP		EP-E	518	3005
CT0012X	DSE TAFE MOTION		120	YES	1103066E						10	3 .	8	20	CE-4	.1465	
CT0015V	SIG COMP POS SUPPLY VOLUE	VDC	0	22	1101106	5	.2		.2	1	10	3	8a	1	CP-28	518	3005
CT0016V	SIG COUD NEG SUPPLY VOLUE	VDC	0	-22	1101107	5	.2		.2	ı	10	3	84	İ	CP-28	518	3005
CT0017V	SENSOR EXCITATION 5 VOLUS	VDC	0	5-5	1105123	5	.2		.2	1	-10	3	BA.		CP-28	518	3005
CTCO18v	SENSOR EXCITATION 10 VOLUS	VDC	0	11	1102028	5	.2		.2	1	10	3 -	BA		CP-28	518	3005
CT0120X	PON BIT PATE CHANNE 8 BIT		LOW	HIGH	1001020	1	1		1		1	3, 4	8		CP-37 CE-4	518	3200
CT0125V	PCM HI LEVEL 85 PERGENT REF	ADG	0	5	1105108	5	.2		.2	1	10	3	AB		CP-25 CP-37	518	3005
CT0126V	PCH HI LEVEL 15 FERGERT REF	VDC	G	5	1101123	- 5	.2		.2	1	10	3	ea		CP-25 CF-37	518	3005
ST0152H	HIGH GAIN ANT POS PINCH	DEG	-90	19 0	1104042	1	-5		-5	1	10	3	8 <u>B</u>		CP-39	1465	
ST0153H	HIGH GAIN ANT POS YAN	DEG	٥	360	1104043	1	-5		.5	1	10	3	83		CP-39	1465	
CTOI6IX	HGA BEAM WIDTH SW FOS-HAR	IIA	OFF	HAR	1102068д						10		8	10	CP-39 CE-4		
СТО162Х	HGA BEAU WIDTH SW POS-MED	iia :	QFF.	KED	11050685						10		В	10	CZ-39		. je‴yd L
CT0163X	HGA TRACK SW POS-AUTO	ца	OFF	AUTO	11020686						10		8	10	Ç£-39		
c70164X	HOA TRACK SW POS-HEACO	HΑ	OFF	ACQ	11020681					- {	10		ä.	10	CP-39	İ	
CI0595A	UDL VALIDITY SIG 4-BIT		ΙΆ	na.	270,700	60	1		1	ī		3	8		CP-37	1465	5000
croshor.	ICH SYM SOURCE EXT OR INT		25T	EXT	11050989			$\left\{ \right.$			10	3	8	. 10	CE-1	518	5000
ST0562T	TIM 2 MASTER UNIT TEM₽	o _F	-20	+155	1105091	1	-1		.1	-1		34. N.	EIB		EP-2	1465	7501
ST0563T	TIM 2 SLAVE WHIT & TEMP	o _r	-20	+155	1105092	1.	.1		-1	.1			EIB		EP-2	1465	7501
C206205	S-BAID REC 1-2 ACC	DEM	130	-50	1104044	5	.2		.2	1		3	ĉв		CP-38	518	5000
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TABLE B-V. - COMMAND AND SERVICE MODULE TELEMETRY SUMMARY - Concluded

			<u></u> 4		51.	2 KB DATA	A SY	STE	W.							f	,	
	Number	Measurement Title	Unit	App ran	ox. ge	Loading number			ISFN iple i			:	Summary TWX number	ana tabs	OM alog and ots	Strip chart record setup	Primary MSK format no.	Thrift tab no.
1				Low	High		1	5	ń	а	g	30		STD	SP	no.	,,,,,	
	CTO640F	S-EALD ROVE 1-2 STATIC PH ERR	KEZ	-100	+100	11020:4	5	.2		.2	1	10	3	äe		CF-36	1465	5000
	STORECK	PROTON COUNT PATE CHANGEL 1	EEC.	1	105	1101059	ı	.1		.1	.1			:	17â	0P-3 6		:
	STOSELK	ffotom count pate channel 2	kīiā	1	10	11 01060	1.	.1		1	.1				173	cr-3d		
- :	5T0822K	PROTOS COUCH PAGE CHAUSEL 3	EK	.I	10	1101073	1	.1		.1	.1			: :	175	CP-36		٠. ا
	STOS23K	FROTON COUNT PATE CHANNEL 4	KEZ	.1	10	1101074	1.	.1		.1	.1	. :			: 17₽	CP-36		
	ST0930K	ALMA COURT BATE CHARRIEL 1	KHZ	.I	10	1102010	1	.1		.1	.1				171	CP-36		· .
	STOSELK	ALIFIA COICTE RATE CHAPTIEL 2	KHZ	.1	13	1102017	1	.1		,1'	.1				178	CP-36	.: .	
	sto83ek	Alpha Count Pate Channel 3	KHZ	.1	. 10	1102025	1	.1		· .r	.1				178	CT-36		
	ST0335K	HOTOL-ALMA INIECE COURT MATE	KHZ	1	100	1102026	ı.	.1		.1	ı,ı				175	02-36		
	ST0540T	TEMP RUC PARTICLE DETECTOR	°F	-116	1 205	1021052	1	.2		.1	.1			. :	174	C2-3*		3756
	STOSLIT	TEMP HUC PARTICLE DETECTOR	°F	-117	+203	1021054	1	2		.1	.1				17A	CP-35		37%
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TABLE IV. - LUNAR MODULE TELEMETRY DATA SUMMARY

	Measurement				MODULE	Ī							L	D	СМ				-
Number	Title	Unit	App ran		Loading number				e rat				Summary TWX number	an tab	alog s and lots	Strip chart record setup no.	Primary MSK format no.	Thrift tab no.	
		<u> </u>	Low	High		16_	<u> </u>	L	_					STD	5P	1	ļ <u>-</u>		-:
SL1030V	PAN CAMERA V/H COMMAND VOLT	lgad; SFEC	10	20	1101030	10			1	Ì			1	XI-A		XP-1	1341	7400	
SLICGIX	PAU CAMERA AIR SQUEDOID		CLOSE	OPEN	1105071F	10		1						1	1	XF-11	1341	7400	
SL1032T	PAN CAMERA FILM MAG TEMP	o	30	110	1010071	0.1				1				X1-A		XP-1	1341	7400	
SL1033H	FAN CAMERA FRANTNIC ROLL POS	INCH	o.	47	1102030	10								XI-A		XD-T	1341	7400	
ar103}#	PAN CAMERA SHUTTLE POSITION	INCH	a	14	1103030	10			1					X1-A		XP-1	1341	7400	
SL1035C	PAN CAMERA LENS TORQUE CURRENT	AMP	0	10	1104030	10		1				· . i	,	X1-A		XP-1	1341	71-00	
SL1036X	PAN CAMERA CAPPING SHUTTER P		CLOSE	OPEN	12050710					1			-A		ı	XD-17	1341	7400	
S11037V	PAN CAMERA FNC TACH VOLTAGE	PEC	0	20	1105030	10								X1-A		XP-1	1341	7400	
201036H	PAN CAMERA EXPOSURE CONSUMIN	FT	0.	2000	1106030	10								Х1-в		XP-S	1341	7400	
SL1039T	PAN CAVERA LENS BARREL TEMP	o.	75	105	1009030	0,1								х1-н		XP=2	1341	7400	
SL104OT	PAN CRUERA FWD LERS TEMP	oŗ	75	105	1010030	0.1				1				X1-B		XP-2	1341	7400	
SL1041T	PAN CAMERA AFT LENS TEMP	م	75	105	1019030	0.1) 1 ₁						·. ·	X1-5		XF-2	13-1	7400	
SELOUST	ean Camera Mech Teme	o _F	30	110	1089030	0.1	1		}			-		X1-B		XP-2	1341	7400	
SL10441	PAN CAMERA SLIT WIDTH	IIICH	J	0.3	1107053	20					.	. 43		X1- <u>н</u>		X2-5	1341	7400	
SL1045X	PAN CAVERA GO/NO-GO		co	100/GC	1105071	10							(1) (3)		1	KF-11		i pi	
SIAO91V	LASER ALCIMETER RSG - 5 VOLTS		ESENT	FRE- SELT	1101053	5								X5-A		XP-6	1341	7403	
S111092V	laser altiveter mult voltage	OLTS	0	-1800	1104053	10								X5-A		XP-6	1341	7 <u>4</u> 03	
SI1093v	LASER ALT FFN VOLT	voens	0	3300	1105053	10			-					X5-A		X7-6	1341	7403	
SI1094T	LASER ALTIMETER CAVITY TEMP	o _F	-13	167	1102053	1					4			¥5-A		хт-6	1341	7403	
SLLLOOK	UVS SPECT CNT - 16 BIT SER PCMD				1102071	1									X7-A				
SPITOIT	UVS HOUSING TEMPERATURE	o F	-40	180	1080072	1								X2-A		XP-3	1330	7001	
\$11102T	UVS MOTOR TEMPERATURE	o _F	-40	180	1010072	1		7						X2-A		XP-3	1330	7001	
SL1103V	UVS INPUT VOLTAGE	VDC	0	40	1020071	1								X2-A		хр-3	1330	700L	1
SLIIO4C	UVS INPUT CURRENT	AMP.	0	1	1070071	1							jugara d	¥2-A		XP-3	1349	7001	ŀ
STL105A	UVS PHOTOMETPLE TUBE HI VOLT	VDC	0	4K	1090071	1								X2-A		X7-3	1330	700L	
SELLIOGV	UVE REGULACED VOLVAGE	VDC	٥	10	1060072	1								X2-A		XP-3	1330	7001	
S <u>r.1122</u> K	TASER SER ALTIMETER OUTPUT 24 BIT	7 104	₄₀	5a -	1201011	2									N-EX		1341	7402	
Thomas d	Vovember 1022			لب			الب		'-		<u> </u>			 1		╼┷┾			ź



TABLE IV. - LUNAR MODULE TELEMETRY DATA SUMMARY

ļ		Measurement		<u></u>	- 7	MODULE	1	-	_]		C14			
	Number	Title	Unit	App ran		Loading number				N fo rate	mat s S/	5	Summary TWX number	tabs	CM alog and oLs	Strip chart record setup	Primary MSK format no.	Thrift tab no.
ļ				Low	High		16	_		_			<u> </u>	STD	SP			<u></u>
l	SL1126K	IR SCAU RAD DATA CHARREL 1	°K	0	165	8201007	20							ŀ	X≿-A]	1349	Į.
	SL1127K	IR SCAN RAD DATA CHARREL 2	o _K	0	250	8201008	20		1						х8-л		1349	
	20175gK	ER SCAN RAD DATA CHANGEL 3	°K	0	400	9201005	20				1				А-8к		1349	
l	SL1129T	IR SCAN HAD SCAN FR MIRROR TEMP	o _F	0	125	1030071	ı							хз-А		X2-4 :	1330	7100
	SL1131T	IR SCAN RAD CALIB PATCH TEMP	°F	10	110	1080071	1							X3-A		X2-4	1330	7100
	2011351	IR SCAN RAD DETECT TEMP	5₽	ٔ ہ	110	1030072	1							хз-А		XF-4	1330	7100
١	SLL134V	IR SCAN RAD BIAS VOLTACE NOW	VDC	150	250	1107030	1						<u>.</u>	хз-А.		XP-4	1330	7100
	SL1135V	IR SCAN RAD CIRCUIT VOLT SUM	VEC	٥	5	1070072	1		ľ					хз-а		X5-ft	1330	7100
	SEL160T	TEMP METRIC LENS FRONT ELMT	°c	5	45	1069030	0.1							х6-А.		XP-7	1341	7401
	SEI161T	TEMP METRIC LEWS BARREL	°c	5	45	1050030	0.1							76-A		XP-7	1341	740I
	5L1162T	TEMP STELLAR LEGIS FRONT ELEMENT	°c	5	45	1029030	0.1							X6-A		XP-7	1341	7401
	SE1163T	TEMP STELLAR LENS BARREL	°c	5	45	1030030	0.1							х6-А		XP-7	1341	7401
l	SU11647	NC TEMP SUPPLY CASSETTE	°c	5	45	1049030	0.1	ļ .		†				_{X6-} 1	s	XP-7	1341	7401
	SLL165X	NG IMAGE MOTION OFF/ON CMD		OFF	OII	1039030	1							X6-A		XP-8	1341	7401
1	SE1166R	METRIC SHUTTER DISC SPEED	RE	81	1260	1059030	1							х6-в		хъ-8	1341	7401
ļ	S11168x	MAP CAMERA DEPLOY/FILM CUT		CUT	DEPLO	1060030	1							х6-в		XE-8	1341	7401
	SL1172X	MAP CAMERA GO/NO-GO		110-C	GO	11050715			, .						1	XP-11	:	
	SL1173X	METRIC FILM MOTION/EXP	мот	011	XPOSE	 								х6-я		xp-6		
l	SEL1760	METRIC FILM IN TAKE-UP CASSETTE	FT	1500	0	1040030	.1							х6-в		хр-8	1341	7401
	SL1177X	MC CYC RATE/MET SHIR CIR EXP		CLSD	CR/ EXP	82010098								ж6-а		XP-11 XD-1		
	SL1180X	IRIG B/PT/DR/AW/STELLAR FIM KOTTON			MULTE	1105071H				,						XP-11		
	SP1191A	V/H INCREASE LEVEL	MEAD SEC	۳.	16	1020030	Y.,							X6-A		χ⊋_ã	1341	7401
	S11269X	IS HP ANT 1, EXTEND		OFF/	STRT/ RET	1106053A									. 1	XP-11		
	SL1270X	is HF ANT 1, RETRACT		OFF/	STRT/ RET	1106053C) 		: : :						1	XP-11		
	SD1271X	IS HE ANT 2, EXTERN		OFF/	STET/ RET	1106053E			***						1	XF-11		
	SL1272X	is he and 2, hetrace		OFF/		11060536									L	X₽-11		
ľ	SL1273C	IS HF ANT 1, MOTOR CURRENT	AMP	0		1109053								X4-A		27-5	i Betjal	
:	S11274C	IS HF ANT 2, MOTOR CURRENT	AMP	0	Įţ.	1110053								7.4-A		XP-5		ļ

TABLE IV. - LUNAR MODULE TELEMETRY DATA SUMMARY

		<u> </u>	ABLE	IV	LUNA	R MODULE	TEI	.EME	TRY	DAT	ΓA S	UMM	ARY		٠					
	Number	Measurement Title	Unit		nox.	Loading number			MSFI			;		unmary TWX sumber	tab:	CM alog s and lots	Strip chart record setup	Primary MSK format	Thrift tab	
				Low	High		16				Τ	Ŧ	1		STD	SP	no.	110.		
N	ST0564W	TIM 2 IRIG TENNG				620 1003 A					1							- 1	<u></u>	-4
	9705657	TEM 2 FORMAT SECURAL	ATC	0	5	1050030	-1							. • •	%6-c		XP			
	\$10567V	IIM 2 MASTER UNIT 5 VOLT REF	VDC	5	5	1201014	1				:				 Xu-c 		ХР-Э	1336	7100	
. :	570568V	TIM 2 BLAVE UNDT 5 VOLT REF	VDC.	o	⁵	1103053	ī								Хб≠С		XF-9	133ú	. 7 173	1
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<u>ـــا</u>	noned No.						1		L_			1								ż

TABLE B-VI. - CRT ERROR CODES

- * Out of normal limits (4 hr)
- \$ Out of normal limits (TWX)
- Out of normal limits (Display)
- P Parity error
- S Low bit rate data not available
- H Off scale high
- L Off scale low
- D Not in format
- M Computed quantity one parameter not available

TABLE B-VII. - TWX SUMMARY DISTRIBUTION

	Pote outres.	Location		No.
	Data category	Folder/table/basket	Room	of copies
1.	CSM and LM summary messages:			
	a. Formats 3, 4, 5, 6, 20 through 24, 60 through 66, 70, and 71	Filed in folders	315B	ı
	b. Formats 3, 5, 70, and 71	Delivered to table 3D	306c	1
2.	SIV summary messages	Discarded		
3.	Other:		, 1 f	
	a. Command history	Delivered to table 6B, Delivered to table 7D, Filed in folder	306c 306c 315B	1 1 1
	b. DSE dump	Delivered to in-basket Filed in Gibbons' folder Filed in Johnson's folder	333 315B 315B	1 1 1
	c. Mission recenfiguration requests (MRR's)	Delivered to in-basket Delivered to table 6B Filed in folder	333 3060 315B	1 1 1
	d. Data recorded messages	Delivered to table 6B Filed in Johnson's folder Filed in Gibbons' folder	306C 315B 315B	1 1 1
	e. Site configuration messages (SCM's)	Delivered to table 6A Delivered to table 6B Filed in folder	306c 306c 315B	1 1 1
	f. Instrumentation summary in- structions (ISI's) or tele- metry summary instructions (TSI's)	Delivered to table 6A Filed in folder Filed in Gibbons' folder	306c 315B 315B	1 1 1
	g. AGC calibrations	Delivered to table 7A Delivered to table 6B Delivered to in-basket	3060 3060 333	1 1 1

T-MINUS/GE		EQUEST RGANIZATION	RESPONSE ORGANIZATION	CONTR	
ACTION REQD	DV (TIM	· · · · · · · · · · · · · · · · · · ·	REQUE	GTED	
SUBJECT:	O1 (11)	<u>-/-</u>	REGUE.	J.E.K	A D D D O L A L
30832613		::- -:			APPROVAL
					-
		<u></u>			TIME :
	<u> </u>				CON SR REP
				***************************************	TIME :
					ME MANAGER
					-
					SPAN MGR
]
					TIME :

	· · · · · · · ·				
RESPONSE:				CC	POD REP
RESPONSE				G	FOD REP
RESPONSE:				CC	FOD REP
RESPONSE:				GC	TIME SPAN MGR
RESPONSE:				GC	FOD REP
RESPONSE:				Co	FOD REP TIME : SPAN MGR TIME : TEAM LOR
RESPONSE:				Co	TIME SPAN MGR
RESPONSE:				GC	TIME : SPAN MGR TIME : TEAM LOR TIME : CON SR REP
RESPONSE:				Co	FOD REP TIME : SPAN MGR TIME : TEAM LOR
RESPONSE:				Co	FOD REP TIME: SPAN MGR TIME: TEAM LOR TIME: CON SR REP
RESPONSE:				GC	FOD REP TIME: SPAN MGR TIME: TEAM LOR TIME: CON SR REP
RESPONSE:				Co	FOD REP TIME: SPAN MGR TIME: TEAM LOR TIME: CON SR REP

Figure B-1.- Sample action request form for use in Building 45.

TIME T-MINUS/GET)	REQUEST	RESPONSE ORGANIZATION	CONTR	OL R
I-MINUS/GET)	ORGANIZATION	ORGANIZA I ION		
CTION REOD BY	(TIME):	REQUEST	ER	
SUBJECT:				APPROVAL
				FOD REP
 				TIME :
				SPAN MGR
	<u></u>			TIME :
				
		<u> </u>		
		<u> </u>		
RESPONSE:			 -	CONCUR TEAM LDR
		·		T LEAN LUK
				TIME :
				CON SK REP
				TIME :
				TIME : SPAN MGR
				7,7,411,011
				TIME :
ESPONDER			7 - 7 - 7	

Figure B-2.- Sample action request form for use in SPAN room.

IME	REQUEST	RESPONSE	CONTR	OL.
- MINUS/GE		ORGANIZATION	NUMBE	ER
CTION REGD	BY (TIME):	REQU	ESTER	
SUBJECT:				APPROVA
				FOD REP
				SPAN MGR
				TIME 7
				CONCUR
RESPONSE:				CONCUR
				TEAM LOR
				TEAM LOR
	-1			TEAM LOR
	A-1			TEAM LDR
	A-1			TEAM LOR TIME : CON 5R REP
				TEAM LDR TIME : CON SE REP TIME : ME MCR
				TEAM LOR TIME : CON SE REP TIME : ME MCR
				TEAM LDR TIME : CON 5R REP TIME : ME MGR
				TEAM LDR TIME : CON SE REP TIME : ME MCR TIME 1 SPAN MGR
				TEAM LDR TIME : CON SE REP TIME : ME MCR TIME 1 SPAN MGR
				TEAM LDR TIME : CON SE REP TIME : ME MCR TIME 1 SPAN MGR
				TEAM LDR TIME : CON SE REP TIME : ME MCR TIME 1 SPAN MGR
RESPONDER				TEAM LDR TIME : CON SE REP TIME : ME MCR TIME 1 SPAN MGR

Figure B-2.- Sample action request form for use in SPAN room.

SPAN ANT SOFT AND ADDITION OF TOTOM REQUEST (CONTINUATION SHEET)

(PLEASE USE SEACH BALLPOINT PERS

TINE (T⊶ MINUS /GET)	REQUEST ORGANIZATION	RESPONSE ORGANIZATION	CONTROL NUMBER
			7- A
₹ 			
			:

Figure B-3.- Sample action request continuation form.

USE BLACK BALLPÖINT PEN	SPAN / MISSIONE	VALUATION ACTION R	EQUEST USE BLACK BALLFOIN PEN	
TIME (T-MINUS/GE	REQUEST ORGANIZATION	RESPONSE ORGANIZATION	CONTROL NUMBER	
ACTION REQU	BY (TIME):	REQUES	TER	-
SUBJECT:			APPROV	AL
			TEAM LOR	
			TIME :	- {
			CON 5R RE	·P
				- {
<u></u>			ME MARAG	ER
				· }
			TIME :	_
}			SPAN MGR	1
			TIME (
				\Box
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RESPONSE:			CONCURREN	CE
			FOD REP	
				- 1
<u> </u>			TIME 1	{
				`
			TIME :	
<u></u>			TEAM LDR	
			TIME :	[
			CON SR HÌ	िय
			TIME :	- [
				_
				\Box
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ļ				
RESPONDER				
ME MANAGER		SPAI	MANAGER	

SCIENCE/YELLOW

Figure B-4.- Sample action request form.

USE BLACK BALLPOINT PEN	SPAN / MISSION E	VALUATION ACTION F	REQUEST	USE BLACK BALLPOINT PEN
TIME (T- MINUS/GE	TEQUEST ORGANIZATION	RESPONSE ORGANIZATION	CONTR NUMBE	
ACTION REQD	BY (TIME):	REQUES	TER	
SUNJECT:				APPROVAL
				TEAM LOR
				TIME !
				CON SA REP
<u></u>	<u> </u>			
				ME MANAGER
				THAE :
				SPAN MGR
<u> </u>				TIME
		···		
RESPONSE:			CC	NCURRENCE
				FOD REP
		,		TIME :
				BPAN MGR
				+ _{TIME} : _
				TEAM LOR
				TIME :
				CON UR REP
E C CONDEC				
ME MANAGER		594	N MANAGI	ER .
1	l			ļ
TIME :		тім	E :	

SCIENCE/YELLOW

Figure B-5.- Sample action request continuation form.

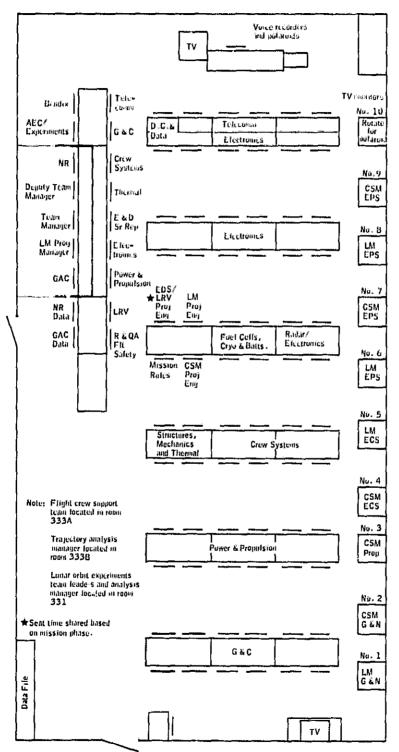


Figure B-4. - Mission evaluation room (Room 306C, building 45).

343A	343B	Sim Bay Experiments 341A	Sim B Experime 341	ents and	afety 330	Crew Flight 6B 33			Instru Sy 3
344A	343	3	41		ALSEP 336	C	ommunication 333		SIM Exper
345A	344								
345B	345			a Library					
Data Sto	rage			351]_	
348A		-	35	С	35	54 	3.	56	
348B	348	3	550A	350B	354A	35 4B	356A	3568	3

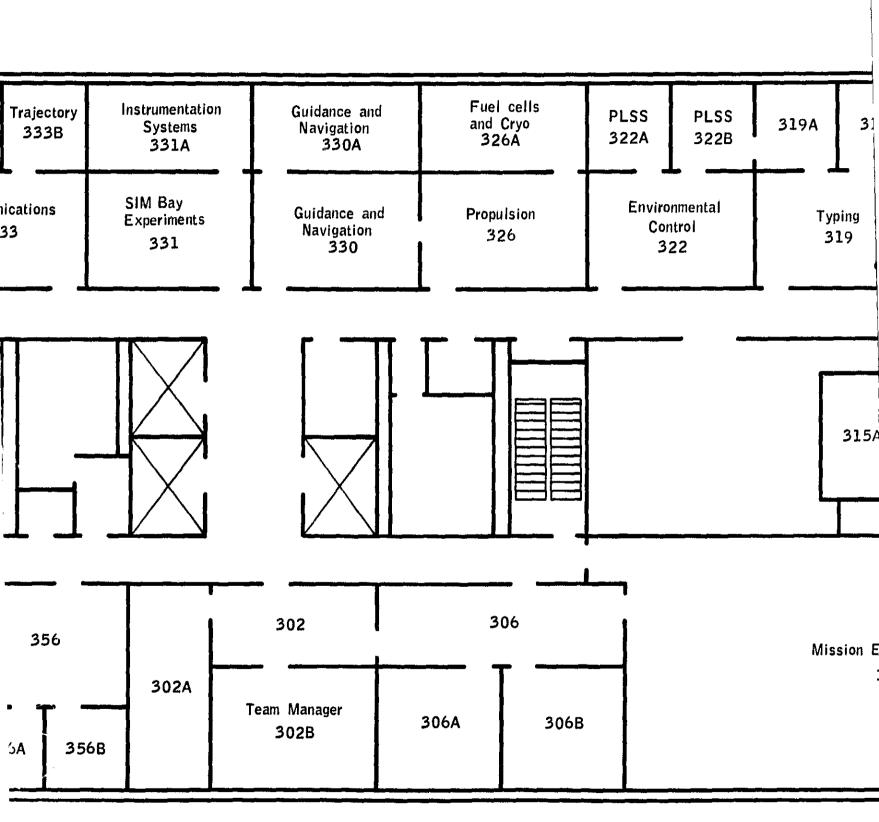


Figure B-7.- Third floor layout and

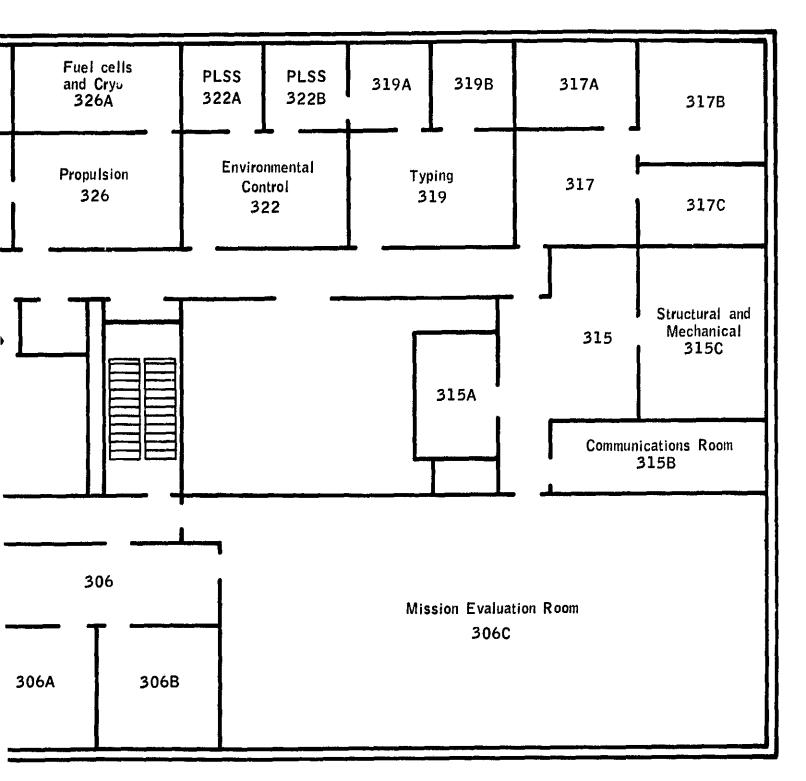


Figure B-7.- Third floor layout and room assignments.

Jeet10n	Title	Hesponsible person	Due date
1.0	Summary	Fricke	Feb. 8
2.0	Introduction	Fletcher	Jan. 10
3.0	Trajectory	Murrah	Jan. 19
4.0	Lunar Eurface Science	Bates/Baldwin	Feb. 6
h 1	Lunar Surface Experiment Equipment	lawery	Jan. 24
\mathbf{a}_{h} .	Extravelieular Activities	Schultz	N/A
5.0	Inflight Science and Photography	Bates/Baldwin	Feb. 13
2.1	COM and LM Experiments	lanier/Irvin	Jan 4
5.2			Feb. 1
2.3	Inflight Beience Demonstrations	Laurentz	Jan. 24
a /	COM Experiment Equipment	Wiesecke	N/A
9.0	Extravehicular Activities	Schultz Kuehnel	
5.5 5.6	Otowage and Hand Photography		Jun. 24
5.0	Photography	Bates/Baldwin Nurdee	Feb. 13
6.0	Command and Service Module		١
6.1	Structural and Mechanical Dysters	Smit.	, un 18
6.2	Thormal	Palmer	Jun. 18
6.3	Electrical Power, Fuel Cells, and Entteries	White	Jan. 18
6.4	Cryogenic Storage	White	Jan. 18
6.5	Communications	Irvin	Jan. 22
6.6	Instrumentation	Munford	Jun. 🗯
6.7	Guidance, Mavigation, and Control	Finch	Jan. 22
6.8	Propulsion	White	Jan. 18
6,9	Environmental Control and Crew Station	liurt	Jan. 33
6,10	Controls and Displays	Munford	Jan. 22
6,11	Extravehicular Activity Equipment	liurt	Jun. 23
6.12	Consumables	Mechelmy	Feb. 5
7.0	Lunar Module	1	
7.1	Structural and Mechanical Systems	Smith	Jan. 11
7.2	Thermal.	Palmer	Jan. 11
7.3	Electrical Power and Batteries	White	Jan. 12
$\dot{\tau}.\tilde{u}$	Communications	Irvin	Jan. 15
7.5	Radar	Irvin	Jan. 15
7.6	Instrumentation	Munford	Jan. 15
7.7	Guidance, Mavigation and Control	Finch	Jan. 16
7.8	Propulsion	White	Jan. 12
7.9	Environmental Control and Crew Station	Hurt.	Jan. 16
7.10	Controls and Displays	Munford	Jan. 15
7.11	Consumables	Mechelay	Jun. 39
8.0	Lunar Surface Operational Equipment	Mecheley.	1 00000
8.1	Lunar Roving Vahiele	Battey/Pendley	Jan. 29
8.2	Extravehicular Communications Equipment	Irvin	Jan. 19
8.3	Extravelicular Mobility Unit	Hurt	Jan. 26
9.0	Filot's Report	Cernan	Jan. 29
10.0	Filot's Report		Jan. 29 Jan. 21
11.0	-2	Zieglschmid	1 980 51
11.1	Mission Support Performance	 Frank	1.3
11.2	Flight Control	1	Feb. 15
11.3	Network	Young	
12.0 I	Recovery	Peterson/Snyder	Meb. 19
	Assessment of Mission Objectives	Blackmer	Feb. 12
13.0	Launch Phase Summary	Mechelay/Fricks	Feb. 12
14.0	Anomaly Summary	Mechelay	March 1
15.0	Conclusions	Dodson/Fletcher	Feb. 28
۸ ۱	Vehicle Description	Fletcher	Nov. 3
я	Vehicle History	Cordiner	Nov. 3
Ç	Postflight Testing	Stafford	Feb. 26
<u>p</u>	Data Availability	Foster	Feb. 26
E	Mission Report Supplement	Fricke	Feb. 28
F	Glossary	Fletcher	March 1
R I	References	Cordiner	March 1

a5-Day report only.

Figure B-8.- Mission report schedule and responsible personnel.

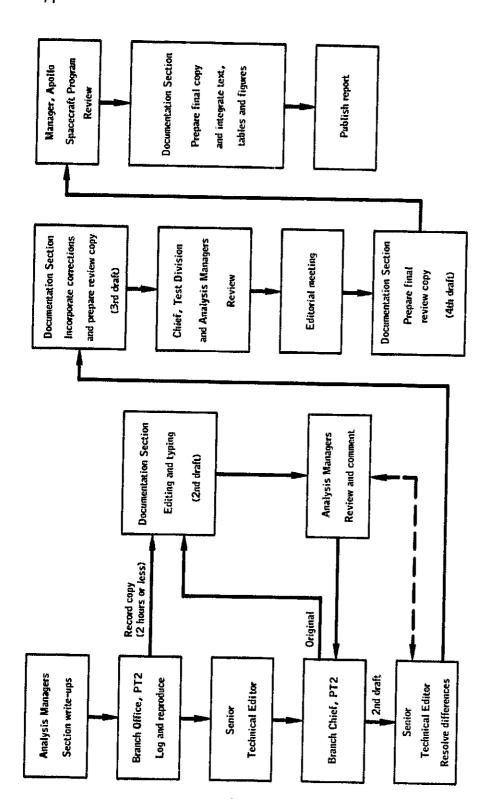


Figure B-7. - Mission report preparation flow chart.

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